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T H E
Hospital-Surgeon :

O R,

A New, Gentle, and Easie Way, to Cure speedily all Sorts of *Wounds*, and other *Diseases* belonging to SURGERY.

A L S O,

A Discourse on *Discover'd Bones*; and a Way to Dress, after Trepanning, with a new *Instrument* invented by the Author.

In THREE PARTS.

- I. The Advantages of this *Way*, and Mischiefs of a contrary Practice propos'd and confirm'd by *Reason* and *Authority*.
- II. Observations of *Wounds* of all Kinds, and every Part of the Body, quickly cur'd by this *Method*: with *Practical Reflections*.
- III. An Idea of the Author's new *Practice* in *Wounds*, and other *Cases*; and his easie and effectual *Remedies*; with some *Observations* and *Remarks*.

By Mr. BELLOSTE, Surgeon-Major to the Hospitals of the French King's Army in *Italy*.

L O N D O N,

Printed for Tho. Cockerill, at the *Three Legs* and *Bible* in the *Poultry*; and Ralph Smith, at the *Bible* under the *Royal Exchange* in *Cornhil*, 1701.

T O T H E

R E A D E R.

WE could, possibly, have found out a Patron, had it been thought necessary, under the protection of whose Name, this Stranger might have come abroad into our English World: But as we look upon Dedications to be, for the most part, empty Formalities, as little minded by every one else, as what is said in 'em, is believ'd by the Writer; so we doubt not but this Book, will every where meet with a becoming Reception, seeing it is sent out on such a friendly Errand, as to heal our Sores, and pour Oyl and Wine into our Wounds.

Surgery, in consideration of the Antiquity, the Usefulness, the Necessity, and Excellency thereof, has ever been in the

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highest

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highest Esteem, among all these other Arts, that were invented for the Service of Mankind. For the Improvment of this noble Profession, the Author of the ensuing Treatise has been at no small Pains, having these twenty and eight Years laboured therein, in some of the most celebrated Countries of the World, with an unwearied Diligence, and assiduous Application; the Fruits of whose Care and Fatigues, the Courteous Reader is here presented with.

Several of the Learned and Ingenious, not only of this, but also of some former Ages, have been very sensible, that this Art was far from having attain'd unto that Perfection, whereof it is capable; yea that Abuses had slipt into Practice, which were unknown to these renown'd Persons, who at first were famous in this Faculty. It was this Consideration, that produc'd that learned and elaborate Treatise of Cæsar Magatus, Doctor of Physick, and Professor thereof in the University of Ferrara, entituled, De rara Vulnerum Tractatione, & Turundarum Abusu. To the same also, we owe many other Chirurgical
Compo-

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Composures, that from time to time have appear'd in the World; some finding fault with one Thing, and some with another in the ordinary Way: Yea some have gone so far, as universally to reject it.

It is not fitting, and would be extremely unjust, to say any thing in Disparagement of the Works of such, as have endeavour'd to oblige the Publick by their Labours: Only this, we think, may be said, without Offence to any; that the Book of Casar Magatus is written in Latine, Rare to be found, and very Long, and consequently of no use to the English Reader: And as for others, they have either superficially only, and transiently complain'd of the Imperfection of their Art; or then having signifi'd to us in general, the Defects of the Common Medicines and Method, don't enter into a Detail of the Reasons, that make them miscarry in particular Cases, or make known unto us either the Name, Nature or Composition of these other Remedies which we are to use in the Place of the Former.

The following Treatise, which was altogether design'd for the Reformation and

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Improvement of Surgery, is without any of these Inconveniences. Herein the Author, has discovered to us the Disadvantages of the usual Remedies and Method, in the differing Cases that occur, by particular Reasons, drawn from the Nature, and Essence of the Things whereof he discourses. He not only describes to the Life, the Way he would have us to take, but also, as to Wounds and some other Cases, points it out to us cloathed with all the most Minute and requisite Circumstances, in particular Instances of Cures of all Sorts, done on all Parts of the Body. He gives us an Account of the Names, Natures, and Compositions of the Simple and Easy Remedies he uses, and which he has found attended with constant Success; not confining himself, or others, to one or two only, but exhibiting, as was convenient, a competent Variety. When he blames the ordinary Practice, and substitutes a better in the Place of it, he accompanies his invincible Reasons, with several Authorities of the most considerable Authors. Moreover, he has taught us how to evite the Exfoliation of Bones: And has given

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us a new Way of Dressing, after performance of the Operation of the Trepan, with an Instrument of his own Inventing.

He seems to have hit upon the Right Way, of carrying the Knowledge of the Art he professes, to the furthest Extent it can go ; which is by giving an exact History of what he has learnt therein by Experience, without vouching upon the Credit of others, whether Ancients or Moderns, what himself has not prov'd by a sufficient number of Tryals. Had this Course been hitherto taken, in all the Arts and Sciences, they had not remain'd at this Day of the Dwarfish Stature we find 'em : neither had the World groan'd, under the bulky Lumber of an infinite number of useless Books, which for the most part, are but imperfect, and mangled Transcriptions, from the Works of others. Had Physicians done so, their Art had not been still term'd Conjectural ; nor had the illSuccess, and jarring Opinions of, by far, the greatest number of those, who bear that hounourable Name, expos'd it to contempt, and rendred it so abnoxious to be slighted, even by the Vulgar. But

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But to return to our Author, all we will further say of him is, that he is an unfeigned Lover of Mankind, Conscientious, Sincere, and Communicative of his Knowledge without Reserve; and all this accompany'd with an unusual Modesty: The Truth of which desirable Character, his Book will abundantly Justify.

We will no longer detain the Reader in the Entry; only it is convenient he should know, that this Treatise in the Original, is printed with the Approbations of some of the most eminent Physitians, and Surgeons in France, which are omitted in this English Impression, that was designedly contriv'd into this small Bulk, for the greater Conveniency of the Reader: Of whom all we have to demand in behalf thereof is, that he would Read, Try, and Judge.

THE

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I Am sufficiently convinc'd, of the Truth of what is deliver'd by *Hippocrates* in his *Aphorisms*, that *Life is Short*, and *Art is Long*: And indeed it appears extreamly difficult, for one Man rightly to acquit himself, in the Practice of *All the Parts of Surgery*: The Capacity of the *Mind* seems too limited, to be able intirely to grasp so extensive an *Art*. Tho' I have, for these eight and twenty Years past, practis'd *Surgery* under different *Climates*, and in divers *Hospitals* of the *Army*; yet I am so far, from thinking to have attain'd, unto the Knowledge necessary in this *Art*, that I own myself scarce to have had the time to improve,

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prove, and make some Remarks on the curing of *Wounds*, to which chiefly I apply'd my self.

However, having had many Opportunities, of discovering the Mischiefs occasion'd by the use of *Tents*, and by the *Long and Painful Manner of Dressing the Wounded*, and often *uncovering their Wounds*; I was mov'd to Compassion by their Sufferings, and thought my self oblig'd, in Conscience, to give my Advice herein. Besides, seeing all Men are allow'd the Liberty, to speak their Mind, concerning these *Arts* they profess; I see not, why I shou'd be abridg'd of that *Priveledge*, which others also assume to themselves, possibly on much flighter Grounds.

It is not to be question'd, but among the great number of *Surgeons*, wherewith *France* abounds; some will applaud the Excellency of my *Method*; but I am apt to think it will not please all. I hardly ever knew any that practis'd *Surgery* as I do, and there are few of all the celebrated *Authors* we have; that deliver any such *Doctrine*; which, being contrary

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trary to the Practice of many *Surgeons*, will not, from the most Part, meet with the Reception it Merits.

'Tis a noble thing, said a *Wise Philosopher*, to be evil Spoken of, for doing well : There is no cause then, why any shou'd be asham'd, to communicate to the *Publick* what he has learn'd, when the *World* may reap any Advantage thereby. Nothing is so inconsistent with *Christian Charity*, and that *Love* we owe to our *Neighbour*, as to refuse to let him light his Taper at ours. *Knowledge*, like *Light*, may be imparted and not lessen'd.

It is not my Design, by this *Method*, that possibly will appear to be new, to destroy the *Foundations*, and *principal Rules* left us by the *Ancients*, concerning the *Curing of Wouuds* : I am willing only to make known my *Observations* on this Subject, and to point out, what I have perceiv'd to be pernicious, in the ordinary *Practice* ; and withal to shew, what is certain and useful in that *Method*, I my self have followed for several Years, which, I hope, will be found so much the more advantageous and reasonable

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sonable, that it is founded on the Principles of the *Circulation*.

I know, it is a pretty bold Attempt, to go about to suppress *Tents*, that have been used for many Ages; and I am not ignorant, that *Custom*, on many Occasions, has the Force of a *Law*. But notwithstanding of all this, I design to maintain the Priviledges of *Nature*, and to shew beyond Contradiction, that *Reason*, and *Experience* are on my Side; tho' at the same time, I run the Hazard of being universally censur'd, for the *Newness* of my *Method*.

I don't altogether condemn Those, who were the first Inventers of *Tents*, *Dilators*, and *Setons*: they have had their *Reasons* for using them, as I have *Mine* for laying them aside. Many things have formerly been imploy'd in *Physick* and *Surgery*, which now are no more in use. The *Received Rules*, the *Order of Curing* and also the *Application of Remedies*, have been chang'd from time to time. That which is *New* at this Time, will one Day be *Ancient*; as what to Day is *Ancient*, was once *New*.

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It is true, that the *Ancients* did lay the *Foundations* of *Surgery* : They have said many Things, but not All ; neither was their *Knowledge* commensurate to the *Subject*. They had the Honour of *Inventing*, but have left that of *Bringing to Perfection*, to *Posterity*. However, it is not to be doubted, that they took all requisite Care, to avoid being deceiv'd, and to inform themselves of the *Truth* : But if they had done All, Nothing had been left us to do.

Add to this, that if that *Prepossession* in favour of the *Ancients*, and the *Blind Submission* to their *Dictates*, had not been laid aside; we had not seen that great number of *Skilful Physicians*, and *Surgeons*, which *This Age* has produc'd ; who, after having shaken off, the tyrannical *Yoke* of *Antiquity*, found out Things no less *Necessary* than *Curious*, that, otherwise, wou'd have remained till now in *Obscurity*, and had possibly been unknown to *Posterity*.

Wherefore, it is not impossible, that in the *Active Part* of *Physick* also, which is *Surgery*, frequent *Experiences*, and continual

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tinual *Diligence*, may have discover'd *Abuses*, that were crept into *Practice*, and authoriz'd by *Custom*.

It can't be deny'd, that what belongs to the *Fabrick* and *Constitution* of the *Body* of Man, Always was; but yet it has not Ever been equally known. The *New Discoveries*, have made a considerable Change in the *Knowledge*, the *Judgment* and in the *Cure* of *Inward Distempers*; and I see no Reason, why there ought not also to be some Alterations, in the *Cure* of *Outward Diseases*, and especially that of *Wounds*, which depend upon the same *Principles*, and have the Advantage of the same *New Inventions*.

I suppose it will not be thought Strange, if after I have laboured, for the space of *Fifteen* or *Sixteen* Years, in *Hospitals* of the *Army*, I have made some *Discoveries*, in the *Curing* of *Wounds*: for *Usage* we know compleats a *Workman*. I have formerly seen the most Part of *France*, I have travell'd over a Part of *Germany*, and all *Italy*, but have hardly found any Place, where *Tents* were not in Use: Several there are, who
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find fault with them; but few will give themselves the Trouble to lay them aside. Some before me have written against 'em; but I believe, I have been the first my Self, who hath had the boldness, intirely to suppress 'em in Practice; excepting only in case of excessive *Bleeding*, and in some *First Dressings*.

Hippocrates, Galen, Celsus, Fabricius ab Aquapendente, and many others cited in this Treatise, have been very near of my *Opinion*; and I have adduc'd some Passages of these famous Authors, that countenance my *Method*. I have alledged some Places, out of *Ambrosius Pareus*, being a well known *Author*, and celebrated for the Cure of *Wounds*; but it appears, by the Remarks I have made, that he is inconsistent with himself, in many Places of his Works; which can't chuse, but perplex the Mind of the young *Surgeon*.

Jacobus Marcus in his Preface to the *Summary of Bandages*, quotes *Septalius*, a famous Physician of *Milan*, and *Cesar Magatus*, a renoun'd Professor in the University of *Ferrara*, who, as he says, condemn'd

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condemn'd, the *Use of Tents*, and the too *Frequent Dressing of Wounds*; and that to this they had suited their Practice, in these two *Cities*, for a very considerable time.

I know, it is not *Length of Time*, that can give a *Value* to *Things*; it is only their own *Excellency*: And every Thing, must once have a *Beginning*. I hope, therefore, if my *Reasons* are approv'd, and some Credit given to my *Experiences*, none will judge it necessary, to wait yet till an *Age* is expir'd, before they will list themselves upon my Side. I know not, whether my *Reasonnings* will be of force enough to perswade; but the *Infalible Proofs*, I have given, of the Goodness of my *Method*, in the *Great Number of Cures*, I have wrought thereby, will I hope suffice to convince the Publick.

I grant it is difficult, at first to come over to the Opinion of another, when it is contrary to our Own: But when the *Life of Men* is concern'd, we ought not to delay one Minute, to free our selves from Errour; and to put off these Prejudices,

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ces, that often hinder us, thorowly to penetrate into the *Truth* of things. The *Opinions* we receive in our younger Days, and the most part of the *Maximes*, we take upon trust from the *Ancients*, are ordinarily the Cause of the *False Steps* we make, in the chief Obligations of our Calling. The *Life* of the *Wounded*, is indeed in the Hands of the *Surgeon*, who has him under his Care : wherefore, he ought to give all Diligence, not only to attain a competent Measure of *Skill*, but also to find out the most *Sure*, and the most *Speedy Way* of curing *Wounds*.

It will be objected to me, that a great number of wounded Persons have been, and yet are every Day cur'd, with the Use of *Tents*, and also by following the *Ancient Method* in all its Circumstances. I answer 'tis true : And indeed if all those who are drest after this manner, were in certain Danger of being lost, it wou'd be down-right *Malice*, and *Cruelty* to use it ; neither had my Endeavours, been at this time needful to suppress it, since it would have been rejected long e're now : But this I affirm, after I have made Trial
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of both the *One* and the *Other Method*, and have carefully considered the Difference between 'em, that those who are cur'd by that of the Ancients, have need of a healthful and vigorous Constitution; besides that it is never without Danger, much Pain, and requires a tedious Length of Time: All which Inconveniencies are avoided, by embracing that which I propose.

In this *Hospital*, we have by this *Method* happily cur'd *Wounds* of divers Sorts, yea of as many *Various Kinds*, as there are *Different Parts* of the *Body*; having had *Wounds* of all these under our Care: Wherefore, this *Happy Success*, can't in Reason be ascrib'd to the *Temper* of the *Air*, which in some Places is favourable to certain *Parts* of the *Body*, as hath been observ'd, by *Guy de Chauliat*, who speaking of *Wounds* in the *Head*, avers that they are more easily cur'd at *Avignon*, than at *Paris*, and that these of the *Legs*, on the contrary, are cur'd sooner at *Paris* than at *Avignon*. The *Air*, I confess, where I am, because of the Situation of the Place, is
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not so replenisht with groſs Parts, as in Plain and Low Grounds; yet is it, notwithstanding, ever hurtful to *Wounds*, both by Reason of the *Niter*, wherewith it is stor'd, and alſo becauſe of its Activity, and Penetration: But I have never yet been able to remark, that it was either more beneficial or hurtful to one Part, than to another; and I have always us'd all poſſible Precaution, to hinder its Access to all *Wounds* whatſoever; as will appear by the Sequel.

I ſhall not in this *Treatiſe*, diſcourſe of the *Natures*, and *Differences* of the *Difeaſes*, that belong to *Surgery*: This is already ſufficiently done to my Hands by others; And the learned *M. Verduc*, *Doct̃or of Phyſick*, hath lately oblig'd the Publick, with a compleat *Piece of Surgery*. I will, therefore, concern my ſelf only with my own *Practiſe*; and if any thing elſe, chance to fall from my Pen, it will be only what I thought neceſſary for underſtanding my Subject.

Tho' in many Places of this *Book*, I adviſe the uſe of *general Remedies*, and a ſuitable courſe of *Diet*, among the *Diverſions*

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sions necessary in the curing of *Wounds*; yet I don't pretend to assume to myself, what peculiarly belongs to *Physicians*, whose part it is to order these things, and according to whose Directions, they ought to be us'd. But I wrote in an *Hospital*, where the whole ordering of the *Wounded*, was altogether committed to me. It shall ever be *Law* to me, especially when the Occasion will allow, to keep my self within the *Bounds* of my *Profession*. That Man, who wou'd acquit himself in his *Employment*, as becomes him, will find enough to do, tho' he keep himself, to what properly belongs to *Surgery*: And those who pretend to know all things, most commonly know nothing at all. But after all, I judge it highly advantageous for a *Surgeon*, to know on certain *Occasions*, how to mak a seasonable use of General Remedies, as well as of Topicks, Vulnerary Drinks &c. For *Opening* of a *Vein*, a *Potion*, or a *Clyster*, when seasonably ordered, and timously administrated, may save the *Life* of a wounded Person; or
at

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at least prevent a great many Accidents.

I have divided this little *Treatise*, into three *Parts* : In the First, I treat of *Tents*, and of the Mischiefs, that continually accompany the use of 'em : And after I have made it appear, that the *Air* is pernicious to *Wounds* ; I add on that Occasion, a Dissertation on *Uncovered Bones* : And then I describe my way of Dressing, after performing the *Operation* of the *Trepan*, with a *New Instrument*, of my own Invention.

The second *Part*, contains a *Collection* of some *Cures* that I have done, according to my Method, with a *Reflection* after each ; which I justify by *Authority*, adducing some *Citations*. There wou'd be Reason, indeed, to think, that I had accommodated *Nature*, to my own *Sentiments*, and the *Success* of my *Practice*, might justly be call'd in question ; if I had not related many very important Experiences, and such as were publickly perform'd : For without doubt, the establishing of a new *Method*, as I have already said, is a pretty bold Attempt, especially

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Especially in a Time, when *France* seems to have advanc'd *Surgery* to the highest pitch of *Splendor*; but particularly *Paris*, to which I owe my *Birth* and *Education*: Knowing therefore that *Experience* is, for the most part, much more convincing than *Reason*, I have quoted several *Cases*, and given a Breif, but very Particular *Account*, of several Cures, which I have related in a *Manner* as *Natural* as possible.

The third and last *Part*, will be no less useful to the young *Surgeon*, than the two others: 'Tis a general *Idea* of my *Practice*, with some *Observations*, and a *Description* of the simple *Remedies* that I use in the Cure of *Wounds*, and other *Diseases* belonging to the Province of *Surgery*: Their *Goodness* is sufficiently attested, by the advantageous *Effects* which they produce; and the great number of *Patients*, cur'd by their Means, ought to gain them some *Repute*.

I have done what I cou'd to give this Book a Plain and Easy *Stile*: If the Language is not Fluent, nor the Expressions

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ons inviting, and agreeably ordered, it ought not to be surprizing: *Simplicity* and *Plainness* best becomes the *Truth*. A *Book* written in an *Hospital*, in the middle of the *Alps*, without any *Assistance* or *Advice*, and which is bottom'd only upon *Practice*; neither can, nor possibly ought to be attended, with the vain Embellishments of *Eloquence*. In a Word, *I expect to perswade, not so much by what I can say, as by what I have done*. I hope the Reader will take in good Part this *Essay*, and will not condemn a *Design*, whose only *Aim* is; *The Glory of God, The Comfort of the Afflicted, and the Perfection of Surgery*.

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T H E

Hospital-Surgeon :

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A New, Gentle, and Easie Way, to Cure
speedily all sorts of WOUNDS.

P A R T I.

Plainly shewing by Reason and Authority the Advantages of this Way, and Mischiefs of a contrary Practice : With a Discourse upon Discovered Bones ; and a Way to Dress, with a new Instrument of the Author's Invention, after the Use of the Trepan.

C H A P. I.

*Of the Four Ends proposed in the Using
of Tents.*

TH E Use of *Tents* in Wounds, being reputed of so long standing in Surgery, and but too much approv'd on, by the Universal Practice, at this Day ; it will be necessary for us, before

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we deliver our own Method, to give our Thoughts thereon ; which also we will confirm by *Reason* and *Authority*.

Fabricius ab Aquapendente in his Eighth Chapter Of *Wounds*, reckons up only three Uses of *Tents* ; but many after him make mention of Four. One is to keep open the Orifice of the *Wounds* : Another to carry the requir'd Medicines to their Bottom : A third to further the coming away of *Extraneous Bodies* : And a fourth is to drink in as it were, and to contain the Filth and Excrements therein generated.

Our Design is at present to consider, whether these Ends, so far as they are expedient, may not be obtain'd without the Assistance of *Tents* : For I would not be thought without Reason, to make any Change of the Order receiv'd in managing of *Wounds* ; nor rashly to lay aside any thing that might conduce to the Relief of the Wounded, or facilitate and shorten the Cure.

CHAP. II.

Of the First End of Tents.

IT is unquestionably certain, that Nature's Endeavours are ever bent towards the supplying of what has been taken away by violent means from our *Bodies*, and uniting the Divisions

ons made therein : We ought not therefore to keep open the *Orifice* of a *Wound* ; but if needful, it may be widened at the first Dressing ; and thereby what is design'd in the first Use, will be sufficiently attain'd. However I don't altogether disapprove of the Use of *Dilaters*, and sometimes of *Tents*, when they are required to contain and support Astringents, to stop the Bleeding, or to hinder the Reunion of fresh Incisions, that sometimes are necessary in the first Dressing of *Gunshot Wounds* : Especially when there is any Suspicion that *Extraneous Bodies* are lodg'd in the Wound, or some Splinter of a Bone that *Nature* is not able to reunite. But if once the first two or three Days are over, *Tents* are not only useless, but extreamly hurtful, particularly in *Gunshot Wounds*, that of themselves are oftentimes sufficiently enlarg'd by the coming away of the bruised Flesh, commonly call'd the *Escar*, before which we need not fear the closing up of the *Wound*.

It was seldom ever known that a *Wound* did fill up, while any *forreign Body* remain'd within it. Now the *Escar* is an *Extraneous Body* in regard of those parts to which it immediately adheres, and must therefore of necessity be separated from them : Moreover *Nature* can't effect a Reunion of the flesh, till first she have free'd her self of what keeps 'asunder the Parts to be join'd.

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Fabricius ab Aquapendente, is of the same Opinion, Part I. Book 4. Chap. 9. where he says, that *Nature never cures a Wound, so long as any thing is in it that offends her.*

I do believe there is no Body but will grant that the Separation of the *Escar* is a Work of *Nature*, that is most speedily perform'd, where the *Natural Heat* is most vigorous. Now seeing new Flesh is bred easiliest at the Bottom of the Wound, 'tis there also where it first begins to fill up; and therefore the Orifice is last of all freed from the *Escar*, and supply'd with new Flesh: for which Cause we have no Reason to fear its too sudden closing; neither does there appear any necessity of using *Tents*, to avoid that Inconveniency.

As for Wounds made by sharp Instruments, they have no need of *Tents*, seeing they don't want to be dilated, but only to be clos'd up: Now what thwarts Nature's Intention not only may, but ought to be laid aside.

Finally, *Contused Wounds* can't be united, till first what is bruised is remov'd, either by the force of the *Natural Heat*, or the Application of Dissolving Medicines, or by Suppuration: and consequently it appears that in this Case also, as well as the others, *Tents* may be forborn: and so the first End propos'd in using them is not to be allow'd.

C H A P. III.

Of the second End of Tents.

THERE will be no need of a great many Reasons to demonstrate, that it is an easy matter, to make the Remedies pass to the Bottom of a Wound, without the Assistance of Tents: for to this Purpose nothing more is required, than to give a pretty soft and thin Consistence, to these Oyntments, Balsams, and other such like Remedies, as are commonly us'd in curing of Wounds.

When a simple Division is made in a healthful and well temper'd Body, Nature stands not in need of any thing else, but the Natural Balsam of the Parts, or the Nutricious Juice, in order to procure a Reunion, especially if it is in fleshy Parts: in which Case the Tents and Oyntments do only irritate the Parts, cause Fluxion of Humours, putrify the Flesh, alter the Nutricious Juice; and so occasion long and very great Suppurations, which rather hinder than promote the Cure.

C H A P. IV.

Of the third End of Tents

THat the Discharge of *Extraneous Bodies* is at all furthered by *Tents*, is a thing not to be imagined: Yea on the contrary, we have more Reason to believe that they conduce very much to retain them. For supposing that any thing remains in a *Wound*, as a *Bullet*, Pieces of Bone, of Cloaths, or Wad, &c. it is almost impossible ever to draw it forth at the same Place by which it entred, unless it be at the first or second Dressing: And this happens very seldom, tho' never without great Pain, and much Time or Trouble.

There is no Probability that a Body so heavy as *Lead*, can remain for any considerable time in one Place, unless it stick in some Bone or Joynt. The *Flesh* has not solidity sufficient to detain the *Bullet*, but gradually yields to its descending Weight: and supposing it did not stir of it self, yet so far wou'd a *Tent* be from furthering its coming out, that it would rather fix it faster, and push it deeper into the *Wound*: Now the *Matter* ever follows the *Bullet*, and makes to it self one or more Cavities; it gathers together, encreases, ferments, and commonly brings on a *Fever*; the Part is weaken'd, the Body wasted, and

and in fine the wounded Person frequently is brought to an untimely End. The like Accidents may also be produc'd, by the Splinter of a Bone, or some such other thing, after the same manner. Hence it is, that on the least Suspition, whether from the Complaint of the Wounded, or any other Appearance, of a foreign Body remaining in the *Wound*, Search is made thereinto with Instruments, and with the Fingers, but for the most part to no purpose, as I have often seen : And all this to satisfy themselves, and to shew to the By-standers and to the Patient, that no Diligence has been spar'd to further the Cure. This Method is no less hurtful than cruel, and by exasperating the Parts, causes Fluxions, and brings on Putrefaction, yea oftentimes incurable Fistula's. But when all these foresaid Means fall short of Success, then a lower Part is sought out, therein to make a counter-opening, which sometimes when the Patient is of a strong Constitution, effects the Cure.

Pieces of Garments, of Wad, of Linnen, &c. are often carried by the *Bullet* into the *Wound*, and there remain after it is drawn out, being deeper lodg'd : These things are but too capable of occasioning troublesome Accidents ; and *Tents* conduce not a little to keep them there, obstructing the Passage whereby they might be expell'd. It is certain that a *Tent* always swells in the *Wound*, and filling up the *Orifice*, keeps

in the *Matter*, which not being longer to be contain'd within the narrow Bounds of the Wound, spreads it self into the neighbouring Parts, glides between the *Muscles*, and carries along with it the *Extraneous Bodies*, which are there corrupted and putrify'd, and infecting the Wound, occasion Mortifications, or Abscesses very hard to be cur'd.

I say then, to conclude this Chapter, that it is altogether in vain to use *Tents* with a Design thereby to facilitate the Discharge of *Forreign Bodies*; and that they rather conduce to keep them in, than assist in furthering their Passage. But if by Chance it should fall out, as sometimes it does, that the Wound close up, when there is some *Extraneous Body* within; it will occasion an Abscess either under the Ancient Escar, or somewhere else, more convenient for *Nature*, by the opening of which only whatever is hurtful and unprofitable will be discharg'd.

As for leaden *Bullets* that have not been drawn out at the first Dressing, their remaining in the Parts can do no great hurt, because they are friendly to *Nature*; and in process of Time, by their own Weight, slip down between the *Muscles*, and often appear under the Skin, from whence they may be taken out, without either Trouble or Danger. The most Part of Surgeons are convinc'd of the Truth of what I say: Only this I must acknowledge, that we ought to endeavour to draw forth such Bullets, as are
either

either lodg'd in a Joynt, or in hazard of falling into some Cavity of the Body ; as that of the Scull, of the *Thorax*, or of the lower Belly, where they might be irrecoverably lost.

C H A P. V.

Of the Fourth End of Tents.

AS for the fourth pretended Use of *Tents*, I grant that they are always soak'd with the Moisture of the Wound ; but as they retain that Humidity, not suffering it to pass out ; so they are thereby swell'd up, and enabled to intercept the Passage of all the other Matter that is generated : Now I would willingly hear a Reason for keeping in a Wound Excrements, which Nature is so sollicitous to throw out ; for being corrupted by their Abode, they alter and destroy the Constitution of the Parts that contain 'em. Seeing then the longer the Matter is detain'd, the more it is depriv'd ; I am perswaded 'tis much better to give it a free Passage, not interrupting its Course, than to shut it up with Tents, and force it to take other ways.

Having therefore demonstrated that the Ends that have been designed by the Use of *Tents*, in so far as they are for the Advantage of the Wounded, may not only be attain'd without 'em, but are really hindred thereby ; I will endeavour in the following Chapter to

take the part of *Oppressed Nature*, and to assert her Liberty by Reasons founded on the Circulation of the *Blood*, and supported by the Authority of many Authors.

C H A P. VI.

Consequences deduc'd from the preceding Chapters,

Nature hath been diversly defined by Authors who have treated therein. *Julius Alexandrinus* calls it *The Author, the Principle and Efficient Cause of natural Beings*. In this Sense it is regarded in *Physick* as the Cause of *Health*, and the *Physician* of *Distempers*; and is by *Van Helmont* considered in three different States; to wit, either in its full Strength and Vigour, or as impaired and weakened, or as altogether oppress'd and prostrate.

These things might be apply'd to our present Purpose; however that I may give a more clear and intelligible *Idea* of *Nature*, which may better suit with outward Diseases, I shall look upon her as the *Chief Worker of whatsoever concerns our Health*: and I am perswaded, seeing she has fram'd every thing according to the Law of its being, she will also maintain them in their necessary *Union*, unite them when divided, and
in

in a Word, restore them to their first Estate, when any way fallen from it.

This *Union* is so necessary for maintaining *Health*, and preserving *Life*, that all, or at least the most part of *Diseases*, proceed from a Defect therein: For things of a forreign Quality are one Way or other mixed with the *Humours* of the Body, which disordering and interrupting the *Union* of their Parts, change and deprave the good *Temperament* and Qualities of the *natural Balsam*, called *Radical Moisture*; and from hence come *Diseases* and *Death*.

In outward Maladies also, and in Divisions of the harder or softer Parts of the Body manifest to the external Senses, it is plain that *Nature* suffers, and consequently must strive with all her Might to reunite the divided Parts. The Surgeon as her faithful Minister in curing Wounds, ought to imploy his utmost Care to assist her, while she labours to effect that so necessary *Union*. To this End he shou'd not only leave her at Liberty, putting no Hindrance in her Way, but also free her from whatever may thwart her Design. Finally, he must assist and imitate her, mind her *Inclinations*, observe her *Proceedings*, and follow her as it were step by step, that he may be ever ready to lend her his required Help.

The Art of Physick turns upon this Principle, that *Nature has the chief Hand in curing Diseases*: 'tis with her the Physician ought to consult, and
without

without her Consent as it were he ought never to do or undertake any thing : and in a Word, he only is the ablest *Physitian*, who has most earnestly apply'd himself to the study of *Nature*.

I acknowledge there are many Cases, where-in *Nature* alone is not sufficient, and in these she must be helpt out by the Hand of *Art* : as in the drawing out of *Extraneous Bodies* from Wounds, cutting off mortify'd Parts, opening Abscesses, restoring broken or disjoynted Bones, and other like Operations belonging to the Province of *Surgery*. But let a Surgeon be never so superficially acquainted with *Nature*, he may easily perceive that by *Tents* and *Dilaters* she is oppress'd, depriv'd of Liberty of acting, and directly oppos'd in her Design, which is to reunite the divided Parts.

Fabricius ab Aquapendente, whom I mention'd before, asserts, that *Nature never cures a Wound, so long as any thing is in it which she can't retain* : For in this he is agreed with the most Judicious, that 'tis *Nature* that works the Cure ; and at the same time shews, that a Tent is such an Enemy to her, as neither ought nor can be kept within, but to her hurt and destruction. *Galen* also in his third Book of Method, says, that 'tis not the Remedies, but *Nature* that closes up Wounds.

Wherefore, Experience having convinc'd me of this Truth, I set my self to consider *Nature's* Designs, her Inclinations, and the Way she

ſhe takes to effect the Cure of Wounds ; and have obſerv'd that *Tents* do ever oppoſe, and prove a Hindrance to her. 'Tis every Day to be ſeen that *Nature* can ſuffer nothing forreign to abide with her ; ſhe endeavours with all her might, to free her ſelf from *Tents* and *Doffels* with which Wounds are ordinarily cram'd up : For tho' they did not occaſion pain, as we may well aſſur'd they do, yet being *Extraneous Bodies*, *Nature* can't endure them without trouble : and let them be never ſo ſmall or ſoft, they muſt neceſſarily preſs always upon ſome *Veſſels*, of which the Body is nothing elſe but a Contexture.

According to their bigneſs and hardneſs, *Tents* do more or leſs diſturb the courſe and order of the Circulation of the *Blood*, ſo far as the Wound reaches : They ſqueeze out the moſt ſubtil part of that, or other Liquors contain'd in the *Veſſels* they preſs upon, which by the Matter already in the Wound, is converted into its own Nature, and becomes a Ferment, that being retain'd, grows hot and corrupt, and ſo alters the containing and neighbouring Parts, and oftentimes imparts its vicious qualities to the Maſs of Blood, by Vapours ſent into the Veins ; yea the Matter it ſelf is ſuck'd up by the Veins, their Orifices being dilated by its Fermentation, Moiſture, and ſtay ; and this circulating with the Blood, intirely corrupts it, and cauſes Fevers that end in Death, unleſs *Nature* by ſome critical and
healthful

healthful Motion, throw out the Corruption.

Ambrosius Pareus in his ninth Book, treating of Wounds, Chap. 5. forbids the Use of Tents in few words, being therein supported by the Authority of *Galen*, who in the fourth Chapter of his *Method*, affirms it to be necessary in all Wounds whither simple or compound, that nothing be between their Lips that may hinder Reunion. The same *Pareus* in his ninth Book, Chap. 7. recommends the Use of long and thick Tents in the Beginning, and afterwards advises to make 'em more thin and short; but does not here forbid their Use. In the same Book, Chap. 15. he takes the part of *Tents* in opposition to a certain Physician, that had written against his Method.

These differing and contradictory Opinions in one and the same Author, must of necessity throw the young Surgeon into perplexing doubts, so that often he can't know, what is best, or what way is most secure. 'Tis certain however, that the mischief of *Tents* was known to *Galen*, because he forbids their Use; and also to that Physician who found fault with the Practice of *Pareus*; his name I know not, but by the acknowledgment of the same Author, he altogether lays aside the use of Tents, and orders to dress a Wound but once in four Days. This Method therefore is not so new as at first I thought with my self, for I had form'd my design ere ever I was aware of what I have here
quoted

quoted ; and it was *Experience* only that opened my Eyes.

Galen Justifies further my Opinion, in his third Book of *Method*, and ninth Chapter, when he says, that in every Wound there are two sorts of Excrements, a gross and a subtil, which as he affirms, hinder the generation of Flesh. Now if this be so, it is very preposterous to keep them in the Wound with *Tents*. If it be said, that the *Tents* may be made so little, as not altogether to fill up the *Orifice*, nor hinder the passage of the *Matter* : I answer, that tho' they be made never so small, yet will they fill up the Mouth of the Wound ; because they ever swell up to the bigness of the Space they are in : but supposing the most subtil matter to escape, yet the more gross and clammy is by them retain'd, and is enough to occasion grievous Accidents. Now if small *Tents* prove such a hindrance to the curing of Wounds, what may be expected from these that are long and hard, and pass to the very Bottom ? However these also are used by many Surgeons, who for want of applying themselves to the consideration of *Nature*, and her Intentions in curing of Wounds, continue to follow a Method that is both cruel and destructive.

Tents, Dilaters, and Setons always occasion Disorders in the Places where they are apply'd ; if they touch the *Nerves*, they cause extremity of Pain, that is often the Original of many Evils, and follow'd

follow'd by many grievous Accidents ; such as Convulsions, loss of Sense, &c. If they bear upon a *Tendon*, its Action is hurt ; and motion ceases : if they press the *Vessels*, as they almost ever do, the Circulation of the Blood is disturb'd.

But suppose a Tent should only
Mamellons press together the * fibrous *Papil-*
fibrenx. *la* that compose the Skin, which
 are of a quick sense, being the Instrument of *touching* ; this alone were enough to disturb the Order and Distribution of the Spirits ; which now moving in a tumultuary way among these fibrous *Papillæ* of the Skin, contract them by the Irritation and pricking which they cause. Now the Fibers being shortned, and the Skin contracted, the Vessels must of necessity be doubled or squeez'd together, and consequently the Circulation diminish'd, or intirely suppress'd. In these Cases there is not so much Blood carried back by the Veins, as was brought by the Arteries : Now if the Circulation is altogether stopt, a Mortification ensues ; if considerably diminisht, an Abscess ; but if the Humours ouze into the Wound from the Capellary Vessels, large and tedious Suppurations are occasion'd.

The Hardness and Swelling are caus'd by the Matter that is stopt, and diffus'd about the Place ; and therefore all the Accidents are more or less grievous, and alter according to the force of the Compression, and quantity of
 the

the diffused Matter, the good or bad Disposition of the Blood, of the Humors, or of the Part affected, and the different Degrees of the Natural Heat, which hastens or keeps back the Fermentation and Putrefaction.

From what hath been said it appears, that the Blood and Humours are not carried, or drawn (as some Authors love to speak) to the afflicted Part more abundantly than at other times, altho' the Spirits run thither in much greater Plenty: But as for the Blood, it is evident enough that it circulates less in the wounded, than in the sound Parts, because it moves with greatest Ease in these latter: And it is a Law of Nature, that a Body in motion always moves towards these places where it finds least Opposition.

The truth of this is clearly demonstrated by the Accidents, which some time ago followed on certain Malignant Fevers in places not far distant from hence. They caused an Obstruction, and swelling in the lower Belly so considerable, that the Circulation was stopt, and a Gangreen ensu'd. But on the contrary, the Blood was violently, and in too great quantity carried upwards; it could not be contain'd within the Vessels, broke thro' all Obstacles, and caus'd sharp Pains, Abscesses, *Deliriums*, and Death.

I have considered the Accidents that most commonly attend Wounds, and do believe, that

that for the most part they proceed from the Disorder of the Circulation of the Blood, occasion'd by broken pieces of Bones, Bullets, or some other Foreign thing remaining in the Wound: These things are not of such a Figure as to cause an Irritation, nor can they of themselves produce any putrefaction, and yet they commonly bring on Abscesses. We ought not then to ascribe these Accidents to *Pain*; for sometimes they come without it; and this often is present where those don't happen. But I am of Opinion, that these extraneous Bodies press the Vessels that are dispers'd through the place where they are, and stop the Blood, which slipping into the Pores and Spaces of the Flesh, by its stay and Fermentation, is there corrupted, and chang'd unto the Matter of an Abscess.

'Tis true, Leaden Bullets, or other things of a like Nature, have been long in the Body, and yet no Abscess hath followed; but this may be attributed to the largeness of the Place wherein they happen'd to be lodg'd so, as not to occasion any Disorder; or because sliding between the Muscles, it did not hinder the Course of the Humours. The other Accidents that ordinarily attend *Gun-shot Wounds*, are also occasion'd by the Defect of the Circulation, as I shall observe in the Sequel of this Discourse; where it shall be made to appear, that *Tents* and *Dilaters* us'd in this sort of Wounds

Wounds hinder the fall of the Escar, the Dissolution of what is bruised, and the passing out of whatever ought to be brought away.

This will without difficulty be granted by those, who well understand the Course of the *Blood* and *Humours*, and the Union and Order of the Parts that compose the Body. All the Parts are so united one to another, that the least Separation can't be made without Pain, Effusion of some Humour, or some other Disorder. Experience shews, that 'tis not only the Air that rots the Bones, but also the Nourishment of the Nervous Parts when it is altered by a malignant Acid; and generally any Matter that has Acidity enough to cause a Fermentation and Corruption in the place of its Abode, when kept in by Tents, or other such Obstacle.

Tho' *Doleus* in his Surgery is not altogether against the using of Tents, yet he shews that we ought to do it with great Caution; from whence it appears he Judg'd them dangerous.

Etmullerus is of the same mind, in his Physical Surgery, where he Joyns such Accidents with the Use of Tents, as ought to fright those who imploy 'em: He advises the using of *Pledgets*, and quite to lay aside Tents in Wounds of the *Nerves* and *Tendons*, and in these of the Joynts. Hence it appears that this Auther was no great Favourer of Tents; for which Reason he orders the Use of the vulnerary Balsam in the cure of
Wounds

Wounds, which promotes the generation of Flesh, and causes a speedy Union, to both which the Use of Tents is directly contray.

All the famous Physicians, who have treated of Surgery, and the curing of Wounds, are well nigh of the same Opinion. I could reckon up a great number, if I thought that these I have adduc'd were not enough. It appears, as I have said in the Preface, that *Septalius* and *Maggatus*, both renowned Physicians that practised Surgery in *Italy*, followed this Method for the space of forty years with very good Success.

M. Caufapé Doctor of Physick, in his Observations on the frequent Use of Bleeding, altogether discards the Use of Tents, without any Reserve. He supports his opinion with Reasons, which I had conceived before his Book came to my Hands. But we may be sure that Author did not write on this Subject, before he was fully convinc'd by his own Experience of what he advanc'd. It would be an unpardonable Rashness for one to write and maintain that, of which he doubted the Truth, and to establish a Method on false Principles.

I very well know that great Numbers will oppose themselves to what I advance on this Subject, which is the common Fate of all Opinions that appear new : but of this Matter Experience only is the most competent Judge ; whose Testimony shall be deduc'd at large, and with
all

all Faithfulness, in the second Part of this Work.

In this first part I make account sufficiently to explain the Reasons that oblig'd me to lay aside the Use of Tents and Dilaters. I can't approve their proceeding, who use them because others have done so, or because the Ancients have ordered it. The Glory or Blame of the Good or Ill Success, say they, accrues not to us; we have Custom and Antiquity for our Warrant. But the *Arts* and *Sciences* ought never to be shut up within such narrow and unequal Bounds. *Knowledge*, *Reason*, and *Experience* would be injur'd to the highest Degree, if we should impose upon them such severe Restrictions, and take from them that Liberty, which should last equally with the World.

C H A P. VII.

Reasons to demonstrate the Mischief of Tents.

MAny of the Ancients, and some of the modern Writers, have spoken of Tents as things indifferent: Such Authors, I mean, as having written of Surgery and the Cure of Wounds, seem to have brought these things to some Perfection. They leave it to the Discretion of the
Surgeon

Surgeon either to use them or not, according as they Judg'd convenient. They did not think this matter of such Moment, as to require their Attention. They look'd on these Means with unconcern'd Eyes, referring themselves therein to the Honesty of those, who first wrote of them. 'Tis apparent they had not observ'd, as I have often done, the mischief occasion'd by Tents, the use of which destroys indifferently the Vulgar with Persons of Merit, whose loss in a State is always to be regretted.

We need not be surpris'd at what we see happen every day in the Cure of all sorts of *Wounds*: 'tis not at this time only that one thing has been taken for another. Our Knowledge is not so great as to reach to all necessary Truths; nor do we perfectly understand the Causes of all the Accidents and Disorders that follow upon Wounds. All those who have treated of this Subject have endeavour'd to explain them according to their opinions, as I have done my best to accommodate them to mine. But Occasions are now frequent enough, and therefore it will be easie for any one to inform himself of the truth, and to distinguish who are in the Right, and who not.

M. De la Chariere, in his Book of *Operations*, discoursing of Wounds, advises carefully to wipe away all the matter of a Wound, and to fill up every the very least corner with Dilaters or Dossels, to hinder its staying, lest it should be suck'd

suck'd up by the Veins, and carried by the Circulation to the Heart. The same Author adds, that the Air is a most powerful Enemy to Wounds: Nevertheless it is impossible to dry up the Matter with all that exactness he requires, what diligence soever be us'd, without taking up some time; during which the *Air* will do incomparably more Harm, than the Matter that therein might have remain'd; which often is not endu'd with all these ill Qualities one is apt to imagine, as shall be made to appear in the fourth Chapter of the last Part of this Treatise.

This Author acknowledges that in *Contusions*, a little extravasated Blood squeezes together the Vessels, interrupts the Course of the Blood and Humours, and causes Fluxions and Inflammations. What then may be expected from a like quantity of Dossels heap'd one upon another? They encrease the Division made in the Body, and oppose the Design that one ought chiefly to have Regard to in curing of Wounds, which is Reunion. To this may be added, that they are more hard, painful, and contrary to Nature, than a little Blood of which he speaks.

As for what is alledg'd by him, that the Matter might otherwise be taken up by the Veins; it is not to be apprehended, unless it were of so great a Quantity as to ferment, or made so long a stay in the Part, as to open and dilate the Orifices of the Vessels. This may indeed fall out in
Wounds

Wounds of the Breast, as will appear in the second Part of this Book, and in these of the *Thorax*, where the capacity and heat of the Part, are sufficient to produce that Effect. This also may happen in great Abscesses, whereof we will give some Examples at the End of this Work. Finally this may arrive when the Mouth of a Wound is stop'd up with Tents or Dilaters, which too often keep the Matter shut up from one Dressing to another: hence it increases, ferments, and ordinarily acquires a vicious and malignant Quality, which may be communicated to the Heart by means of the Circulation of the Blood.

Of all those Mischiefs *Tents* and *Dossels* may be accounted the chief Occasion. Now to avoid all these Accidents, and the staying of the Matter in the Wound, we need only leave open the Orifice, and put nothing into the Cavity which may increase the Separation of the Parts; to the end they may come together, when there is nothing to hinder their Reunion, nor any empty Space, where the Matter may make any considerable stay. These I think are good Reasons, and strong enough to overthrow an Opinion, that is contrary to my ten or twelve years *Experience*.

The same *M. De la Charriere*, a little further says, that the Orifice of a Wound must be dilated when it is so little that it will not suffer *Dossels* to enter, that so it may be fill'd therewith:
and

and I on the contrary widen it that I may avoid the using of them, for Reasons mention'd before. Moreover it is to be fear'd that a *Dilater* may be lost, and fixt in a deep *Wound*. Of this we have had sufficient Proof in the Person of one of our *Generals*, and many others wounded in the Battel of *Marseils*.

Wherefore if Tents may be laid aside, as has been done in this Hospital, even in deep Wounds of the most fleshy parts of the Body; much more ought they to be forborn in others.

The same *Author* before mention'd, rejects the use of Tents, excepting in Wounds of the Breast, and lower Belly that penetrate: Notwithstanding it may be seen in the second Part of this Treatise, where we discourse of Wounds in the Breast, in what manner we have cured many such of different Natures without the Assistance of *Tents*.

As for those in the lower Belly, I know it may be said to me, that if I have not us'd Tents to them, it is long of the difficulty of their Application, and stay in this Part, where, by reason of the continual motion, they can't be kept in, unless with a very strait Bandage. But the matter is otherwise; for indeed I see not for what Reason Tents are required to this part any more than to others. Let us suppose now, that the expected Suppuration of the contained Parts that are wounded, is already begun, 'tis impossible the Matter can come away, while the

Orifice is stoppt up with a Tent, but it must fall down by its own weight into the lower part of that Cavity: also what Matter or Blood may there be collected, can't be discharg'd by reason of the Tent, which is as a Dam to keep it in; especially if we wait till the Suppuration of the Teguments, which is never great, be excited by Irritation or by Tents. Otherwise the Motion in Breathing, and the lifting up of the *Pertitonæum* in Inspiration, will drive out the Matter as it breeds, if a free passage be allow'd it.

There is one Case wherein Dilaters, and sometimes Tents, become in a manner necessary; and that is when a Wound is accompanied with a considerable Bleeding; then they may be us'd to carry Astringents to the opening of the Vessels, and to support and keep them on; chiefly in deep Wounds: For if at first we should Joyn the Lips of the Wound, and apply Astringents upon them, the outward Bleeding might be repress'd, before that of the Vessels were restrain'd; and so the Blood running between the Muscles would there be corrupted, and would spoil the Parts wherein it is contain'd, and these that border upon them, and might also occasion Suffocation, and a Gangrene. This is what I saw at *Turin* to befall the Baron de la Serra, a Gentleman of *Savoy*, who being wounded with a Sword near the right Arm-pit, had a branch of the *Vena Subclavia* opened: he was dress'd by a very expert Surgeon, who, whether by chance

chance, or otherwise, neglected to apply Astringents to the Opening of the Vessel, tho' the Bleeding was very great: the Wound was joyned, and the Part loaded with Astringents, which were made fast with Compresses and Bandage. In the mean time the Blood continu'd to run from the Vein, and to diffuse it self between the Muscles of the Breast. Two or three Days past before the first Dressings were taken off; and then the *Thorax* was found to be gangren'd. The wounded Person dy'd in a little time after.

The Cause of this Gangrene can't reasonably be ascrib'd to any thing else but the retaining of the Blood and Matter, which finding no Outlet, press'd together, by reason of their bulk, the Vessels and the Nerves, and hindred the Circulation of the Blood, and Course of the Spirits and other Liquors, so that the *Blood* became quickly corrupted, and caus'd all these Disorders. These same Accidents may be occasion'd by Matter, shut up in the Cavity of Wounds by *Tents* stopping their Orifice; especially if that Matter is considerable for its Quantity, and very much crowded.

When in my younger Days I frequented Hospitals, and practis'd with very able Surgeons, I have seen at time of dressing, the *Tents* for the most part expell'd from the Wounds, in spite of the Bolsters and Bandage: Nature then clearly signifying her Intention. Nevertheless

They continued still to use them, forcibly thrusting them again into the Wounds, tho' not without much Pain. What a strange Method is this? How is it possible for a Wound to close up, so long as a forreign Body is entertain'd within it? If a Pea, or a little Ball, be kept in an Issue, tho' for ten Years, it will still remain open: but if you take it out but for one half Day, you shall find it intirely fill'd up.

A Tent does the same to a Wound, that the Ball does to an Issue: and *Fistula's* that trouble so many People all their Life, are the Effect of Tents that have been inconsiderately us'd, in the Cure of their Wounds. The Humours take their Course through these Places which they find open; this becomes first habitual, and then natural and necessary, and thereby the Flesh is hardened and becomes callous. These Impurities which *Nature* sometimes evacuates by ways surprizing to us, being detain'd in one Place, become a Bag of Mattet; and that same *Nature*, unwilling that any thing superfluous and unprofitable should remain with her, by a peculiar Sagacity, makes a Vertue of Necessity, and uses these Passages she finds open, to free herself from the Excrements and Humours that disturb her; but at the same time a part of the * *Radical Balsam*, which is the Life and support of the Parts, passes out also by the same ways.

* *Baume*
radical

I know not to what I can better compare these Openings in the Body, through which Humors take their Course, than to these of Trees, whether made by Nature herself, or the assisting hand of Man, by which the Sap that nourishes both its Trunk and the other parts passes out. The difference only lies here, that these help to encrease and preserve the Trees, but those to destroy and weaken the Body.

For certain it is that *Fistula's* considerably impair the Parts, never leave those that have them in an intire State of Health, and shorten their Days, whatever any may alledge to the contrary. But that which surprises me most is to find the afflicted Persons, support the Inconveniencies they suffer with a kind of Satisfaction, fancying that if in time they should permit their Sores to close up, then Death would undoubtedly soon after follow.

Wherefore when there is nothing to hinder the filling up of a *Wound*, Art hath nothing else to do but to observe Nature's Proceedings, which sometimes exceeds in the breeding of Flesh, in soft Parts; and sometimes in generating the *Callus* in hard Parts : But 'tis observable that in curing Wounds, she proves oftner superfluous than deficient. Thus it appears, that *Tents* ought not to be us'd in Wounds, seeing Nature very frequently throws 'em out ; because she can't bear the presence of what is forreign. Don't we see, that so soon as

She is oppress'd with any thing hurtful, all her Endeavours are us'd to get rid of it? She has a thousand means unknown to us, and often takes such secret and singular ways as are hidden from the most Curious Anatomists. That young Man, under the Care of *Fernelius*, who had swallowed an Ear of Grass, that came out some time after by a little Abscess between two of his Ribs, is a sufficient Demonstration of this Truth. *Ambrosius Pareus* also relates that he took from the Groin of a Woman, a Needle that had entered at the Hip of the same side. In fine, the consideration of the surprizing Ways whereby these extraneous things were cast out of the Body, obliges us to conclude, that Nature is very wise, and can't endure the least thing that is hurtful or disquieting. A little Dust in the Eye disturbs all her Oeconomy, and no rest is to be expected till it is out. A small Crum of Bread that goes not the right Way, but is by some motion, or the agitation of a little Air thrown into the Wind-pipe, does it not endanger Suffocation? What endeavours are made to cast it out? The Air breaks forth with Violence from the Lungs, the whole Body is shaken, all its Parts are in motion, the Face is inflam'd, the Eyes run with Tears, Convulsions follow, and this admirable Master-piece of Nature, is all in trouble and Disorder, and all this for a thing in appearance most inconsiderable. A Stone or a little Sand in the Reins

Reins, Ureters, Bladder or *Urethra* will scarce permit a moments rest for the violent Pain: And indeed our Life may be called an Image of Death, so long as a Stone is lodg'd in any of these Parts: so true is it that Nature abhors what disturbs her.

Now 'tis to be observ'd, that according to our Method, the *Dilaters* and *Tents* with which the Wound was filled hitherto, must be taken out, so soon as the Bleeding is stop'd; and that the surest way is for the Surgeon, altogether hence forth to leave off such dangerous Means: because their use may irritate, and at the same time by touching the Vessels, may open them and renew the Bleeding, which by protracting the Cure, occasions new troubles to the Wounded, as I have often seen.

Fabricius ab Aquapendente, Part I. Book 1. Chap. 2. speaking of transverse Wounds of the *Forehead*, advises to apply long and slender Compresses wet with the White of an Egg, one on each side of the Wound, and to press them together, so that the Lips may touch without stitching, especially if we would avoid the Deformity of a *Scar*. Now I know no Reason, why the same Method mayn't be put in practice, in Wounds of other Parts of the Body, made by cutting Instruments: Nor do I understand why such should be dilated, seeing they require only Re-union. For my own part, I have practis'd this way in many Places, and

on different parts of the Body with the desired Success.

These who are unprejudicated, or will reflect but a little on the common *Method*, will be convinc'd that I don't without Cause reject it. 'Tis easie enough to apprehend the Cause of the perpetual Pains suffered by those miserable Persons, whose Wounds are fill'd with *Tents* and *Dossils*: For having thrust into the Sore Lint twisted, hard and uneven, and apply'd thereon Plaisters and Bolsters, all is made fast with a Bandage that passes several times about the Part: Now tho' this may seem not to be very strait; yet it is ever tight enough, to press upon the *Tent*, and cause it to touch every where upon lively and sensible Parts. For the inward Parts of our Body are indeed very sensible, and unaccustomed to the Touch of any extraneous thing; so that the Wounded can't move in the least, without great Pain; his wounded Members are utterly disabled, and by a kind of Necessity he is confin'd to his Bed as a lame and impotent Paralytick, and always in one Posture, which is no less, if not more pernicious than the Wound it self; especially in Hospitals, where the Beds not being such as are requisite for the Ease and Comfort of the Sick, cause almost universal Excoriations, and oftentimes Mortifications and Gangrenes. This is what I have many times seen; and frequently through the Fault
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of those who follow the ordinary Method of Dressing.

Not that other Parts of our Body are destitute of Sense, any more than these I just now spoke of; those that are so charitable as to visit Hospitals, will attest this: nothing is there to be heard at the Hours of Dressing, but Cries and Howlings. But we can't enough recommend to Surgeons on this Occasion, to use their Patients in the most gentle manner possible: For it must be own'd that there are some among them, that would think they had not acquitted themselves as they ought, unless they made those under their hands, to roar out for some considerable Time; which makes many to think that Surgery and Cruelty are unseparable.

C H A P. VIII.

The Reasons of the Authors Practice, with the Motives that induc'd him thereto.

FROM what I have already said, I know I shall be accus'd as if I only writ to find fault with the *Methods* now in use. Nevertheless I am not affraid to avow, that I am inspir'd with a much Nobler Design: I take no pleasure to trample upon the Monuments of the

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Dead,

Dead, or to carp at the Living; 'tis Conscience alone that obliges me to maintain what I have advanc'd for the Good of the Publick. But as it will be an hard task to perswade some People of what is contrary to these Maxims they have suck'd in as it were with their Milk, it will be convenient to propose Examples of what ought to be followed, and to point forth what is to be shun'd. For in fine, 'tis here as in Religions, every one thinks his own Method the best.

Among the great number of those, who at this Day practice *Surgery*, there are very few whose *Methods* agree. Some, without departing an hair's breadth from the Opinion of the *Ancients*, blindly follow their Dictates; and it is enough that any thing has been advanc'd by such or such an Author, to make it pass into an unviolable Law. Others more active and Ingenious, not regarding the received Custom, bestow liberal Jeers upon whatever is not the Product of their own Brain, and treading Antiquity under foot, are every day making new Systems of *Surgery*. I know not with which party I shall be ranged: But I have done my best to accommodat, what the Ancients have delivered, to the Opinion of the Moderns, and Circulation of the Blood; imitating in this the Bees that gather from every Flower, what is fit for making Honey: And if *Experience* may have any Sway, my Practice ought to obtain, as being confir'm'd by it.

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These who extol the Cures they have done, have also Reason to support their Practice; which because of the Progress it has made, passes even at this Day for the best, and most secure, in many Places. This Error hath taken so deep Root, and gain'd so many Followers, that notwithstanding all my Experiences, I doubt not but many will stand out against my Method, reject my feeble Reasoning, and treat me as a Violater of Custom and received Maxims, and a rash and inconsiderate Innovator. For with them it is a general Rule, That a deep Wound ought to be kept long open, in order to a perfect Cure. Yea, the Sick themselves being prepossess'd in favour of this false Opinion, believe that the Accidents which happen some Months, yea some Years after they have been cur'd, proceed from the too speedy closing up of the Wound, alledging the Wolf was shut up in the Sheepfold. As for my self, I am perswaded, and am able to maintain it, that almost all such Accidents are caus'd by keeping the Wound too long open, whereby the parts being much weakened, are hard to be restored to their first State, so that the least motion, or Excess, renews the Sore, and brings back the *Symptoms*.

As for Wounds of the Head, where the Scull is laid bare, Exfoliation infallibly insues, if they are long kept open: If the *Cranium* is broken, the alteration, and the Accidents, are yet more

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considerable, and cause often a Weakness, a depravation of Sense, Giddiness, Head-ach, and other like Distempers, and sometimes a corruption of the Membranes and of the Brain.

It is most certain that a Wound cannot be kept long open, but a great Suppuration shall follow; and then, in spite of all precaution, the Matter that is every where diffus'd, will glide along, and rest upon the Bone; and the most subtle Parts, as *Galen* says, passing into the Capacity of the Scull by the Fracture, will fall upon the Membranes; from whence it can't be got out, but by the Operation of the Trepan; and if neglected, will bring on Mortal Symptoms.

Wounds of the *Thorax* or Breast may be clos'd up without Danger, as will be more largely made out by Experience, in some Places of the second Part of this Work. For those which continue to suppurate for a long time, do infallibly bring on the Tifick, Asthma's, the Cough, shortness of Breath, and incurable *Fistula's*.

Tents cannot be kept in Wounds of the lower Belly, because of the perpetual Motion of the Guts; and consequently such are secure from the Pains and Infirmities that follow upon their Use.

Wounds of the *Reins*, of the *Emulgent Veins*, and of the *Ureters*, if not speedily united, leave behind them incurable *Fistula's*, with a running
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of Urine at the Wound. The same falls out in those of the Bladder.

In these of the Joynts, if Tents be us'd, the Cure is very tedious, difficult and dangerous; for commonly there follows upon them an Alteration of the Tendons, of the Nerves, and of all the Part; sometimes a shortening or lengthening of the Member, with loss of the nutritious Juice, and a Weakness that endures for Life.

Wounds of the Extremities cause an intire dissolution of the Nerves, and often the loss of the Members; those of the Bones, Rottenness: Those of the Flesh moreover, besides a great deal of time spent in vain, occasion much Pain, Vexation, and Charges.

I have seen Wounds of all these sorts; some of them I have had dress'd with Tents, where powerful Digestives were us'd to procure great Suppurations. I have met with others, that were followed by all such Accidents. But this I have ever observ'd, that these which were handled according to my Method, were preserv'd from all these troublesome Symptoms.

'Tis known to every one, that in Wounds made by cutting Instruments, Union is immediately to be endeavour'd. In order to this design therefore we ought not to fill such Wounds with Lint, as we have formerly said, seeing this directly thwarts it. It is also very hurtful to
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use Digestives, because disordering the Contexture of its parts, they corrupt the Blood.

The fall of the *Escar* in Gunshot Wounds cannot be prevented, whatever Diligence be us'd ; wherefore Suppuratives are here of no Use, seeing Nature can do that Work without their Assistance, which only weaken and destroy the temperament of the Parts to which they are apply'd. Large Suppurations therefore are not necessary in the curing of Wounds.

For in fine, I can't discover any Reason, why it should be Judg'd requisite that a Wound should suppurat a long time, in order to be brought to a compleat Cure. And surely before we abandon our selves to such a dangerous Practice, it is necessary first to understand what *Pus* or *Matter* is, whence it comes, and what is the necessity of it.

We may observe then, that *Matter* is nothing else but the *Blood* of ulcerated Parts, discharg'd into the Wound from the Orifices of Arteries that are cut or torn ; and this is mix'd with the Nutricious Juice, brought to the Parts for their Sustenance ; whereby they are rendred lame as it were and useless. If by the Compression of *Tents* or *Dilaters*, the Blood be squeez'd out of the Vessels, it may fill the Capacity of the Wound, whereas otherwise it would have held on its ordinary Course. We are not then to be surpriz'd if the *Blood* and the *Nutricious Juice*, are suddenly turn'd into *Matter*, seeing they
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are out of their natural Place. For even as a small Rivulet may make a great Lake, if its Waters are kept in with a Dam: Just so the little Pipes that are laid open in a Wound, tho' but small, in comparison with the largeness of its Cavity, being press'd, as has been said, by a *Tent*, which divides 'em more, and hinders their Reunion, continually pour forth such Liquors as they contain; and the Tent serving for a Bank, a Lake is form'd in the Cavity of the Wound. We ought not therefore to wonder, if Plentiful Suppurations continue, so long as this Method is followed; and it is an undoubted Error to account such Evacuations profitable. *Etmullerus* in his Medicinal Surgery is of Opinion, that a Wound would close up of it self, if it was not hindered: he says, we ought to endeavour to prevent the marring, and putrifying of the *Natural Balsam* of the wounded Part, and to use *Balsamicks*, according to the Principles of *Helmont*, to hinder it from degenerating into a hurtful Acid, and to preserve it from corrupting.

In fine, he finds Fault with the Surgeons for using first *Suppuratives*, then *Digestives*, and after *Mundificatives*, *Sarcoticks*, and *Glutinatives*, as they term them: *That Way*, adds he, *is too tedious, delays the Cure, causes Inflammation of the Part; alters the Nutricious Juice, and often turns the Wound into a sordid Ulcer.*

It is apparent by this Authority, that *One Remedy skilfully manag'd*, is sufficient to answer all the Intentions proposed in the Cure of Wounds; that *great Suppurations* are hurtful; and that it is for the great Advantage of the wounded, to reject the *bulky Rubbish of improfitable Druggs*.

As for such Divisions in the Body, where many small Vessels are quite cut asunder, if the Lips of the Wound are brought together, they will unite of themselves; and this according to the Opinion of many *Authors*, vouched also by *Experience*, providing nothing Extraneous go between.

Now touching *Gun-shot Wounds*, that are so common in the Hospitals of the Army, I am bold to affirm, that my Practice has given me more Insight into their Nature, than all the Authors that ever wrote on the Subject. But not to enter upon a Debate concerning Bullets, it is evident that the Effect they produce in the Body, do something resemble Cauterizing; yet tho' sometimes I use this Word, I can scarcely believe that they really cauterize; but being round, solid, and compact Bodies, they cause Contusion; they tear and bruise whatever is in their Way, and occasion a Heaviness in the wounded Part.

It is certain that the Bullet very often stops the Bleeding of the Wound, whether by the Disorder it causes in the Parts through which it
passes

passes, or by cauterizing with its touch the Arteries and Veins: But be it how it will, the Course of the Blood is stoppt, and the Passage between the Arteries and Veins is intercepted, so far as the Wound and Contusion reach. The Heart, according to the Law of Circulation, squeezes the Blood it has receiv'd into the *Aorta*, from whence passing into all the other Arteries, its Course is stoppt at the Wound, where it can't as formerly be receiv'd by the Veins, and finding no free passage, it extends the containing Vessels, and forcing its Way, diffuses it self according to its own Quantity, and the Space it finds: Hence proceeds the Hardness, Swelling, and Inflammation, so ordinary in *Gun-shot Wounds*. If the Blood be there corrupted, or spoilt by some *Malignant Acid*, the Symptoms become yet more troublesome and obstinate; and after the Fall of the Escar, Abscesses, or large and grievous Suppurations ensue.

A simple *Convulsion* only, for like Reasons, is capable to produce the same Accidents; which being nothing, but a disordering of the Fibers and little Pipes, that changes the Regularity and Situation of the Pores, the Circulation is rendred uneasy, and the Part choak'd up. From hence comes the Dulness, and Absence of the Spirits, which if not speedily recall'd, can't but be attended with grievous Consequences.

I shall speak a word or two of the Cure of a *Contusion*, in the last Part of this Book: Here I shall only shew, that Tents are very destructive to Gunshot Wounds, in regard they hinder the Fall of the Escar, and coming away of whatever is bruised, which ordinarily is consum'd by Suppuration. A Tent actually hinders the passing out of that *Matter*, and retains it in the Wound, where it causes all these Mischiefs of which we have spoken. It may also, after the Escar is remov'd, renew the Bleeding; bruising by its rubs, and bringing to Suppuration, the young Flesh, bred upon the Orifices of the wounded Vessels, while the Escar was a separating.

The multitude of those that are to be seen maimed, and with wooden Legs, and *Fistula's*, can witness to their Sorrow the Pernicious Effects of *Tents*: yea how many are there, who by the Loss of their Lives, shew their fatal Consequences? Could they have spoken from the Grave, they would have said more than I can on this mournful Subject, and the destructive Custom had soon been suppress'd. Nevertheless the Pains suffer'd by these unfortunate Persons, their Complaints and Cries, have not yet been able to cause a *Method*, establish'd and authoriz'd by Antiquity, to be laid aside: neither has the ill Success of so many Cures in vain attempted, been hitherto capable to undeceive those who have practis'd *Surgery*.

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However, I thought my self oblig'd to communicate to the Publick, what I knew upon this Subject; that I might, if possible, procure for afflicted Patients, a *Gentle, Speedy, and Easie Method*, for the Comfort and Incouragement of such as so generously expose their Life for the *Glory* of their Prince, and the *Good* of their Country.

All my *Practice* is levell'd at these Ends, as may be seen by the Sequel. I abstain from using *Tents* and *Dilaters*, as much as I can, and as the Case will bear: I occasion little or no Pain, save at the first Dressing; and then I always widen the Wound, especially if it is a *Gun-shot One*, and do my best to draw out the *Extraneous Bodies*: Now on this occasion I have three things further to recommend, which are to dress *Gently, Speedily, and Seldom*.

There is a Way of Dressing Wounds made with Iron Instruments, usual among the Soldiers, call'd *the Secret Dressing*, wherein they carefully suck the Orifice of the Wound, in order to draw out the Blood therein contain'd; then they take *Samaritan Balsam*, or *Oyle* and *Wine* mix'd without Boiling, and sometimes either of them alone, which they squirt into the Wound from their Mouth, and without any other Dressings, cover, and bind it up, muttering some Words between their Teeth, to make the Method appear mysterous, which causes many People to think it magical.

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But these Words are ineffectual, and their Vertue imaginary, serving only to palliate and authorize the Ignorance of such People, who know not what they do ; and to deceive the Imagination of the wounded. These Cures tho' accounted miraculous, have nothing in them supernatural, and may be perform'd without invoking the Assistance of *Demons*. 'Tis known to every one, that *Blood* when it is out of the Vessels, coagulates, and corrupts in the Wound, if it make any Stay there : and that by Sucking out the extravasated Blood, Suppuration is prevented, and also that is remov'd, which might hinder the Reunion.

C H A P. IX.

That it is necessary to Dress Wounds Gently.

Gentleness is one of these things, that are indispensibly requir'd in curing of Wounds. This Circumstance is so necessary, that without it other things have seldom the desir'd Success ; yea so much am I possess'd in Favour of this Opinion, that when I see some that are rigorously handled, I often admire how they ever come to be cur'd : and indeed they never are, without

without a great many *Accidents*, that fall out in the Progress of the Cure.

'Tis ordinary for a wounded Person to be seized with a *Fever*, which being symptomatick, must be a consequence of the *Pain*. The *Inflammation* that brings along with it such a numerous Train of troublesom *Accidents*, is often occasion'd by an Irritation of the sensible Parts. *Want of Sleep* proceeds ordinarily from nothing else, but the *Pain* that is either over all the Body, or in one Part only. Now if by *Dressing gently*, these three *Accidents* are avoided, we may quickly hope to see a perfect Cure.

Tents, *Dilaters*, and *Setons*, as hath been already sufficiently observ'd, are the principal Cause of the *Pain* that the poor Wounded endure, and the Occasion of so many hurtful *Accidents*; their remaining in Wounds being infallibly attended with most destructive Consequences. If then we lay them aside, we may prevent the *Pain*, and what follows upon it; and so having the Command of whatever may give us trouble in *Dressing*, we may manage the Cure as we please.

Finally we ought to endeavour with all Care, to remove so soon as possible, what might cause *Pain*, and by *Evacuations* and *Diversions* wisely to withdraw what wou'd foment it: but if it hath already assaulted, we must apply what is most proper to ease, and overcome it: for in

a Word, Pain is a very *formidable Enemy* in the Progress of any Disease whatever.

C H A P. X.

That it is necessary to Dress Wounds speedily in order to prevent the Access of the Air.

IN this Chapter I endeavour to shew, that the *Dressing* of Wounds ought to be perform'd *speedily*, because Experience hath taught me, that the *Air* is a mighty Hindrance of their Cure: And this is one of the chief Reasons that oblig'd me to follow this Method: For tho' some Pain in Dressing is inevitable, yet by this means it lasts for so short a time, that the Wounded scarce perceive it. The *Air* has not time enough to exert its Influence upon the Flesh destitute of its Coverings; and the nitrous Parts, with which it is thought to abound, can't pass to the Bottom of the Wound: for I am of Opinion, it is the nitrous, clammy, and as some think, arsenical Qualities or Particles of the Air, that destroy the due Temperament of the Parts, when depriv'd of their natural Cover, and that consumes, or at least alters the *Natural Balsam* or Nutricious Juice, which is as the *Cement* that unites the divided Parts.

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All the *Ancients* and the *Moderns* also are in this agreed, that the *Air* is an Enemy to Wounds: And Experience attests, that even the most pure and subtil, is ever attended with a certain sharp and clammy Acidity, that sticks to Iron and Steel and makes them rust.

'Tis the same *Air* that also occasions so many Disorders; that alters and corrupts the *Bones*, hurts the *Nerves*, and destroys the *Tendons*, corrodes the *Flesh*, and utterly marrs the Temper of the Parts; wasting the *Spirits* that preserve the *Radical Moisture*, which with a little Help, and often times almost without any, unites broken *Bones* by a *Callus*, fills up Wounds with *Flesh*, cleanses *Ulcers*, and brings them to a Scar.

Hippocrates, Sect. 5. Aphor. 20. says, that the *Cold* is offensive to ulcerated Parts; that it hardens the Skin, causes Pain and Hardness, occasions Lividity, Shiverings, Fevers and Convulsions.

By the *Cold* here is to be understood the *Air*, by means of which Disorders are excited in us; it is corrosive, and therefore exasperates the sensible Parts; it hardens the Skin, thereby hindering the Transpiration of the *Vapours*, which being retain'd cause Pain, Hardness, and Fluxion, and these produce Shiverings and Fevers; and oftentimes are followed by Lividity, Convulsion, and a Gangreen.

The Access of the *Cold Air* is indeed one of the Causes of the Pain, which is so common in Wounds remaining too long uncovered, because it coagulates the Humours, and causes the Blood in the small Vessels to become more sharp, and so to ferment and corrupt.

A little Experience is sufficient to make one agree to these Reasons: We ought to second the Designs of Nature, that are ever aim'd at the preservation of what is most precious, such as the *Spirits*: Now we may be assured, that when a Wound is left uncover'd, or often opened, there is occasioned a considerable Loss of these same Spirits, whereby the Part is so weakened, that being unable to make the right Use of the Nourishment sent for its Maintenance, it is all chang'd unto Matter and Excrements.

That *Cold* is hurtful to Wounds, no Body doubts: All are likewise agreed, that the Air is at all times colder than the inward Parts of our Body. Now if the Touching of the Air only rots the Bones; if it act with such Force and Violence on Bodies so solid as they are; it will undoubtedly be yet more destructive to the Nerves and nervous Parts, that are so tender; as also to the Tendons, to the Flesh, and to all Parts in general, to which it has Access.

The Air moreover produces many other Accidents in Wounds: for as has been said, the
Spirits

Spirits are dissipated by the long and frequent Attacks of the Air, whereby its acid Parts being at liberty, and not intangled, easily stick to the Flesh, and other uncovered Parts, which they corrode and tear with their Points; hence proceed pricking Pains, whose Cause often many are at a loss to conjecture.

That same Acidity of the Air, coagulates the Blood in the Mouths of the Arteries, that open unto the Wound; hinders its Course, and makes it to swell up the Vessels, and very often also to discharge it self on the Part: Hence are Tumors, Fluxions, Hardness, and if it Ferment, large Abscesses: For Fermentation here is only the changing of Blood unto Matter; now the Blood having neither the same Situation nor Motion as formerly, and its parts being disjoyn'd, easily corrupts and Ferments in a little time: unless we believe that the Air can't congeal the Blood in the Vessels, which yet is beyond Controversie.

That the Air is very piercing, appears from *Chilblains*, and *Kibes* in the Heels, where it has the Force to congeal the Blood in the Veins, and capillary Arteries of the Part afflicted. If then it has such Influence on Parts cloathed with the common Teguments; what will it have on such as want 'em? In fine, if it is able to coagulate the Blood in the Vessels where it may freely circulate; much more may be fear'd from its Acidity in Wounds, where the Course

of the Blood being in a manner interrupted, the wounded Part receives but little Aid from the natural Heat, and the Spirits ; and the Blood it self, that precious Balsam of Nature, being unmov'd, and not receiving fresh and vigorous Supplies from the Heart, is corrupted, as was said formerly, and turn'd unto Matter : and indeed if we press the Places about the Wound, we shall perceive a certain clammy Matter to come out as from so many little pipes, which often also is corrupt and stinking.

Now if *Nature*, which is every way admirable and always industrious in preserving, don't in such a Case exert her utmost Efficacy, the Part must be mortified, in spite of all the Efforts of the inconsiderat Surgeon : and then if it is a Member that may be cut off, the next thing is to deliberate whether this ought, or may be done without danger. Sometimes 'tis doubted whether the wounded Person can bear up under the Rigour of so painful an Operation, considering his ill Temperament and Disposition of Body, which only are accus'd, as the Cause of all these Accidents ; for the Wound of it self was inconsiderable, and might have been soon cur'd, in a Person of a stronger and better Constitution : or otherwise the blame is laid upon some venereal Venom, Vice of the Parent, Disorder, &c. In fine, the *Patient* and his *Temperament*, are always found guilty, and fall as Victims to Ignorance.

I have been in many Places my self, where such things have happen'd, and where neither the Persons wounded, nor the Surgeons understood the true Cause of the supervening *Accidents*. It is however very requisite in this to employ all our Care; chiefly in Hospitals of the Army, where seldom are to be found, all these Conveniencies that were to be wish'd, for correcting the Cold and the ill Quality of the Air, which frequently is infected, and corrupted. 'Tis in such Places where we ought to hinder it with all our Power to pass unto the inward Parts of our Body, or to get access to those that are destitute of their Coverings, lest at the same time it impart to them its destructive Impressions.

It may possibly be objected to me, that if that acid and nitrous Quality of the Air, can produce such Disorders in Wounds; we ought much more to be incommoded, by the frequent and necessary Use thereof in Respiration. But 'tis answer'd, that the *Wind-pipe* and *Lungs* purify the Air, which is in a manner filtrated and prepar'd by them, and so becomes Friendly to Nature, that only uses the purest Parts, driving out by Expiration, together with the hot Vapours or Exhalations of the Breast, that which is useless and hurtful. But it is not so in Wounds, that have no *Spring*. 'Tis only the *Lungs* that are fitted, and appointed for receiving the Air; they alone perform the Of-

fice of Bellows to prepare, purify, or to expell it according to the necessity of our *Machine*.

Besides it may be said, that when the Air enters unto places that are covered, and furnished with Membranes, its Acid Parts slide upon them, and take no hold; but if there chance to be *Ulcers* in the *Lungs*, the Air will then cause considerable Disorders; and the *Cough* which afflicts such kind of Patients, proceeds undoubtedly from nothing else, but the *Irritation* occasion'd by the *Air*, in parts depriv'd of their *Covering*.

Moreover it must not be denied, that the *Air* abounds with very subtil and piercing Parts, because it will pass through the *Skarfe-Skin*, the *Skin*, and other Teguments. There are many Examples which shew, that Persons have subsisted by means of the *Air* passing through the Pores of the *Skin*, when Respiration was altogether Supprest, whether by *Suffocation*, or other such like Accidents. Some have also been taken down from the Gallows, who were thought to have been a pretty while Dead, and yet with a little help have recovered: whence it is easy to infer, that *Nature* had found the means, to furnish the Heart and Lungs with a sufficient quantity of *Air*, to refresh them during that Interval, by the Pores; seeing it could not pass by the way of the Wind-pipe. A like Consequence may be drawn from those that ly in a *Lethargy*.

We

We may therefore reasonably infer; that if the *Air* is so subtil as to pierce, and pass through Membranes so close and compact; it ought much more to penetrate considerably beyond the Extent and Cavity of a *Wound*, where there is nothing to purify or subtilise it; as there is, when passing thro' the *Pores* of the *Skin*, it supplies the Place of Respiration: for since here the *Skarf-Skin* keeps back the more gross, earthy, and clammy Parts of the *Air*; we have Reason to think that it ought not to produce any ill Effects, in the Places to which it comes. It were to be wish'd. that Wounds were cover'd with something at the times of Dressing, which might perform the Office of the *Skarf-Skin*, and exclude the Acid and viscous Particles of the *Air*, together with other noxious *Effluvia* with which it is fill'd. For if these Exhalations floating in the *Air* are the Original of so many Diseases, as some modern Philosophers affirm; why mayn't they occasion very dangerous Symptoms, when they take hold of, and cleave to live and sensible Parts? Now seeing these *Forreign Particles* are capable of alterations no less than the *Air* itself, we may be assured that the ill Qualities which this has contracted in Hospitals by the Breath and Transpiration of the Sick, are also communicated to those; seeing such *Atoms* have a Substance, and a certain Form.

These *Carbuncles* that are so frequent in

Hospitals of the Army, are a sufficient Proof of what I say. They are occasion'd, as some think, *by the *arsenical Particles* in the Air, which being taken in by Respiration, are thrown out by the strength of the natural Heat upon some *Emunctory*. Now seeing this falls out much oftener in Hospitals than elsewhere; we may infer, that the Air also is here much more replenish'd with these subtil and impure Particles; by reason of which the Wounds here treated, without very great Care, become sometimes *cancerous*, always *putrid*, and often *Fistulous* and *incurable*.

I have learn'd by my long frequenting of Hospitals, that these Places where the Sick have remain'd for some Time, retain, long after they are gone, the ill Smell communicated by them. This I believe is owing to the impure Particles that stick to the Walls: Whence these who design afterward to live in the Place, are oblig'd to Plaister and whiten the Walls, that they may not be hurt by the pernicious *Effluvia* proceeding from them.

Cloathes, and other Goods, brought from Places where the *Plague* is, must be cleans'd and purify'd from the *Pestilential Particles* that cleave to 'em; without which Precaution they might excite a general *Pestilence* in the Places to which they are brought. 'Tis this which inclines me to think, that the nitrous and viscons Quality of the Air, resides in those Particles

ticles or *Atomes*; which if they are capable to stick to a Body so smooth and polish'd as a Wall, and that for a long time, without losing either their bad Smell, or ill Qualities; much more will they do so to a Wound uncovered, which is always moist, and where they may get easier hold, and act more readily, because of the Tenderness and weakness of the Parts.

The dead Flesh of any Creature, if it is often handled and exposed to the *Air*, suddenly putrifies: and a *Fetus*, a Member, &c. if it be kept in a close Vessel cover'd with Spirit of Wine, may be preserv'd for ever; whereas on the contrary, a little *Air* will dissolve it, and reduce it to nothing.

That the *Air* is a *mighty Enemy* to Wounds, is a Truth own'd by the modern Practisers of Surgery, no less than by the Ancients: but there are few take sufficient Care, to hinder its Access to the Wounded Parts. Knowledge is in vain when not put in Practice. Nevertheless this is a thing so absolutely necessary, in the Cure of any Wound whatsoever; that without it, nothing that a Surgeon's Art can perform, is to any purpose, but all is hurtful and destructive.

From what has been said, Consequences may be deduc'd very useful in Practice. All the Regard I have for *Antiquity*, was not prevalent enough to keep me from the declaiming against an Abuse, tho' establish'd by Custom; seeing

Truth depends on the *Things* themselves, and not on the *Opinion* the Ancients had of them. I know many have already express'd themselves on this *Subject*, much after the same manner as I have done. *Celsus*, who ought not to be reckon'd among the Moderns, has written something that looks this Way. In his *Book Of Wounds of the Skull*, Chap. 4. he says, that *Flesh* breeds easily enough in any part of the Head, except a little above the Space between the *Eye-brows*, where often there remains an incurable Ulcer, because in that place there is a Cavity of the Bone full of Air, bordering upon the *Os Cribrosum*; which *Air* hinders the filling up of the Ulcer.

By all this then it evidently appears, that the *Air* is a powerful *Impediment* to the *Cure of Wounds*; and that the *speedy Method* of Dressing ought to be preferr'd to that which is yet in use in many places. And to conclude, it is certain that the Pain caus'd by the use of a *Tent*, its remaining in the Wound, the length of the Time taken up in Dressing, and the frequency thereof, of which last I shall speak in the following Chapter, are the genuin *Sources* of all the Accidents that follow on Wounds. Wherefore we must *dress speedily*, and according to our *Method*, if we would prevent many dangerous Inconveniencies.

C H A P. XI.

That Wounds ought to be dress'd seldom.

Galen in his Fourth Book *Of the Composition of Medicines*, Chap. 4. orders to dress *Ulcers* but once in three Days. This Method he acknowledges to have come from *Asclepiades*; and I can't but wonder that such a *Practice* has found so few Followers, being so necessary and advantagious for the Patient.

If *Ulcers* require not to be dress'd every Day, as this Author thinks, *fresh Wounds* do yet much less call for it. Nevertheless it is the Custom in almost all *Hospitals*, to dress regularly twice a day; and I believe there is scarce one to be found, that does otherwise, excepting that of *Brianston*, where they dress the wounded, some only once a Day, and others but once in two, three, or four Days. If I had found this Method hurtful, I would not have been so wicked as to continue to use it; much less to desire that others also might do the same.

Pareus, Book 13 Chap. 11. treating of *Ulcers*, seems to be much inclin'd to the Opinion of *Galen*, when he disapproves often Dressing: and yet in his Eleventh Book, Chap. 5. speaking of *Gun-shot Wounds*; he orders to dress them twice a Day, and often once in every eight Hours.

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It is surprizing, that so famous an Author as *Pareus*, who believed the Air extreamly prejudicial to Wounds, adducing also many passages from the Ancients to support that Opinion, should have left behind him *Rules* altogether repugnant to it. But 'tis probable he was so busied in compiling so great a Work, that he had not time enough to make the necessary Reflections upon this Subject, which requires a very diligent Application: and this may be the Reason why in many Places he contradicts himself.

Fabricius ab Aquapendente, Pag. 1. Book 2. Chap. 7. discoursing of the way to preserve the Substance of the Parts in simple Wounds, affirms again and again, that it is enough to take off the Dressings once in three or four Days; which he confirms by the Authority of *Galen*, where he treats of the *Cure of putrid Ulcers*.

'Tis certain, that the seldomer a *Wound* is dress'd, the less it matters; providing it be not stuff'd with Lint or some such thing: the *Remedy* also has the more time to communicate its Vertue to the Part, which seems in some sort to be nourished thereby: And the Nutricious Juice, has more liberty and time to restore the lost Substance, and reunite the divided Parts. On the other hand, if it is often dress'd, the Strength of the Remedy being destroy'd, and its Vertue diminish'd; it becomes so weak, that it has no Effect, and its Moisture running away, like the Sap of a Tree when 'tis pierc'd, is mixed with, and turn'd into Matter.

What

What *Nature* does in uniting broken Bones, may instruct us what we ought to do in curing of Wounds : we see that a *Callus* is bred without the Assistance of any thing, by the wise Contrivance of *Nature* only, if so be that she is not by frequent Dressing, or indiscreet motions of the Part, diverted from her Work.

When the little *Fibrous Threads* begin to be form'd in a Wound, in order to unite the parts that are divided ; and the Nutricious Juice is communicated to the Part, to restore it to its natural State ; if then the Part is often disturb'd with frequent dressing, if the Wound is search'd with the *Fingers*, or with a *Probe*, or a dry *Tent*, &c. what *Nature* has done, will be bruis'd and separated ; and her Work destroy'd as soon as begun : so that if this Method is continu'd, the *nutricious Juice* becomes thick, and hard, and cleaves to the Sides of the Wound ; where it forms a *Callosity*, and often a *Fistula*.

Generation then, which is the principal Work of *Nature*, cannot be accomplish'd without Rest ; so true it is that Repose is necessary to her in all her Operations. Hence it is that I cannot apprehend by what Reasons they are influenc'd, who by frequent and painful dressing, without any necessity, exasperate the Wounds ; and I protest I could never my self indure so cruel a Method. Sometimes they search them with their *Fingers*, sometimes with an *Instrument* ; and not contented with this, if they fancy they have found any thing, desire their
Friends

Friends present, and their Boys to do the same : and in this miserable Condition is the wretched Patient detain'd sometimes an hour ; and that most frequently twice a Day. I dare not adventure to name the Places in *France, Italy,* and *Germany*, where I have seen the wounded us'd on this fashion ; and that by such as held very considerable Posts, where a good Method was extreamly necessary.

Finally, after much time has been spent in raking into the Wound, they think they are bound in Credit, for the satisfaction of the Wounded, and the By-standers, to draw out something, and shew it publickly, lest they seem to have labour'd in vain. Now if it should chance that at length any little piece of a *corrupted Membrane* is found ; (which would not be strange in a Wound dress'd in this manner, where Corruption often causes great Disorder :) it is drawn out with abundance of *Ceremony*; and the *Operator* fails not to declare, with great confidence, that this is it which occasion'd the *Restlessness* and *Pain* of the preceding Night. And now, you must think, the wounded Person is half cured.

Heavens ! What Abuse ? Is it possible that any Man can be so much impos'd upon ? I would gladly understand what it is that did separate this shred of a Membrane, or these Fibers, &c. ? It will be answered without doubt that it is *Nature*; which endeavouring a Reunion, rejects that which opposes it. I demand again
how

how it was brought to this Place? By the same *Nature*, will one say. And why then will not she go on to drive that extraneous thing quite out of the Body, seeing she has done so much? She is able to drive out Bullets tho' fastened in a Bone, as I shall shew in the second Part; to expell Splinters; yea, to bring them to the Orifice of the Wound; and that a considerable time after it has been clos'd up: why should we then apprehend that she will leave such things within, from which she may so easily free her self; either by the Orifice of the Wound, or by some other more convenient way? For it is certain that *Nature* left to her liberty takes ever the easiest way. Besides, all the Parts of the Body have an Elasticity, or *Spring*, whereby any Forreign Thing is naturally driven from the Center to the Circumference.

Antony Benevent a Physician of *Florence* relates, that a certain Woman swallowed a very large *Needle*, which two Years after came away by her *Navel*: And *Tarentus* a Physician also, reports; that a Maid, who had swallow'd a *Needle* nigh about four Inches in Length, voided it ten Months after by the *Urinary Passage*.

From hence it appears, that the Industry and Sagacity of *Nature*, surpasses that of all the *Esculapian Family*: She knows what she does; and wants not to be instructed in the ways she ought to take, in order to drive out of the Body whatever oppresses, or is forreign and noxious unto her. The *Surgeon* ought only to employ

ploy his utmost care, to understand and follow her: he must study her *Designs*, and take all heed not to divert her from her *Enterprises*; seeing she does nothing in vain.

After what I have said concerning *Nature*; I would not have any to think, that I am one of those who regard her as a *Divinity*, and ascribe unto her a *Reason*, whereby she disposes all her wonderful Works. *Reason* I look upon, as a peculiar Priviledge of the *Human Soul*. Neither am I of the Opinion of *Empedocles*, that whatever she does is mysterious: 'Tis him that *Aristotle*, in his third Book of *Metaphysics*, ridicules for giving no other Reason for many things that were ask'd him, but this; that it was *Nature's Pleasure*. All I will say is, that if her Operations are marvellous, they are owing to her powerful *Author*, who has entrusted her with whatever we have that is most precious.

But to return to my Subject; it is fit I should advertise my Reader, that I would not have any to follow my *Method of seldom dressing*, unless first he hath intirely lay'd aside the Use of *Tents*, and *Dilaters*; which by retaining the *Matter*, would cause a Fermentation, whereby these same *Tents* and *Dossels* wou'd also be corrupted: This is what fell out not long ago in a Cure to which I was call'd: The *Dilaters* that had been us'd were carry'd along with the *Matter* that was discharg'd between the *Muscles*; and there

there putrifying, the Corruption was quickly communicated to the neighbouring Parts: Whence it appears that this *Method*, hath in it Singularities and insparable Circumstances, that must not be omitted.

M. Verdue in his *Pathology*, Tom. 1. fol. 439. advises not to do as some *Surgeons*, who e'ry minute are opening the Wounds of those who are under their *Care*: For, says he, by too often taking off the Dressings, we hinder their reuniting; and give occasion to the *Air* to insinuate it self into the Wound, and to coagulate the nutritious Juice: this indeed is a most just and reasonable Thought. I remember when I was at *Rome* in the year 1678, I chanc'd to see a little Book written in Italian by the chief Surgeon of the Hospital of the *H.Ghost*, whose name I have forgotten: He therein discours'd of Wounds of the *Head* only; and prov'd by very good Reasons, that they ought to be dress'd only once in three or four Days, and sometimes not so often: Moreover in dressing he did not altogether lay open the Wound, but kept always upon it some thin Cover, as is done at this day in many Places in dressing of Burnings.

In Fine, he took such great care to hinder the *Air* from passing into, and offending the Wounds which he dress'd; that we may be assur'd he Judg'd it a grand Impediment to their Cure: Which was also his Opinion of frequent Dressing. In the same Book he adduc'd many
Exam-

Examples; among which, were several Accounts of very considerable Cures, accomplish'd by this Method.

It were much to be desir'd that every One, without regarding the publick Censure they might incur, had the same Charity to reveal the *Knowledge* they have attain'd by their Care and Experience. For it is very probable that by the *Universality of Mankind*, almost an *Universality of Knowledge* is possess'd: One has a *Genius* for one thing; and t'other has a *Genius* for another, and each their different Endowments: and in Civil Life, and particularly in an *Art* so necessary for the Preservation of Mankind, every one ought to communicate without Reservation.

After all, there is no Rule without some Exception; and I freely own that there are certain Cases, wherein *Tents* ought sometimes to be us'd: as in some Wounds of the Breast, and in an *Empyema*; when we would hinder the total Evacuation of the Blood or Matter, to preserve the Strength of the Patient: and finally, on some other Occasions, where they may be Judg'd absolutely necessary.

There are other Wounds, to which *Dilaters* are necessarily required; as when the Bones being rotten or alter'd, we wait for their Exfoliation; or when they must be kept open in order to some further Operation to be perform'd upon them.

There

There are also other Wounds, to which of necessity we must occasion some *Pain*; whither by drawing forth extraneous Bodies, or by setting broken Bones, or by dilating their Orifice.

Others there are, that will take up some time in dressing; as in these of the *Head*, where we often suspect there may be a *fracture* of the *Scull*: Also when the *Scull* is broken; when some Operation is to be perform'd upon the Bones, in complicated Fractures; and when extraneous Bodies are to be drawn out: in such Cases we cannot dress so quickly as were to be wish'd.

To conclude, there are some that must be often look'd to, when notwithstanding our Care, the Suppuration is great: as in Abscesses that are cavernous and deep, in very hot Seasons, and in Patients of an ill Disposition of Body, who abound in excrementitious Moisture; or when *Phlegmons*, *Erysipela's*, Lividity, and Gangrenes, or any other unexpected Accident, follow upon a Wound: For it is the part of a prudent and Skilful Surgeon to accommodate himself to emergent Occasions, and to correct the Symptoms as they fall out.

C H A P. XII.

*A Discourse upon Discovered Bones ;
with the way to prevent Exfoliation.*

IT is almost an Universal Custom, (at least I have seen it put in practice wherever I have been) so soon as a Bone is uncovered, to widen the Wound by *Tents* and *Dilaters*, and wait for its *Exfoliation*. This is so superstitiously observ'd in many of the King's Hospitals, that it would be Judg'd a very hainous Offence, to do otherwise ; yea, or to neglect what hath been deliver'd by the *Ancients* : As if we were eternally oblig'd, blindly to follow their *Dic-tates*.

Experience has taught me on many Occasions, that nothing more is required, to prevent the Spoiling of a Bone, when only uncover'd, but to defend it from the Access of the *Air* : For this Intent we ought to endeavour to close up the Wound with all possible speed, by means of proper Bandage, and balsamick Remedies ; without dilating it by *Tents* and *Dossels*. Thus the Bone will soon be covered ; and the *Exfoliation* thereof is avoided, which would infallibly follow, if time had been given to the *Air*, to exert its pernicious Efficacy upon it.

Many

Many Authors have injoin'd Sticking in such a Case. *Hippocrates*, and several others after him, have approv'd thereof in Wounds of the Head; which notwithstanding may be united without it, unless they are large and tranverse, and of the lower Parts; where sticking oftentimes becomes necessary, by reason of the figure of the Skull.

If any considerable Portion of the Bone is bared, with loss of the covering Substance, the Wound being large, will take up a long time before it is clos'd up: in this Case all our Care, will not be able to hinder the Alteration, and rotting of the Bone; either by the *Air* admitted in the numerous Dressings; or by the *Matter* running along, or staying upon the Bone. To prevent therefore this Inconvenience; we must in the first Dressing pierce the Bone, as nimbly as possible, in many Places, with the *Pyramid* or *Pike* of the *Trepan*: By this means a way is opened to a *Marrowy Juice*; which thickning upon it, covers over the Bone in a little time, without suffering it to lose any of its Substance.

It is well known to Surgeons; that any considerable Portion of the Skull, laid bare by a Wound, can never again be covered with Flesh, without the Assistance of Art; because of the Smoothness and Glibness of its Surface: Upon this Consideration it was that many of the Ancients thought fit to rasp it, that it might become
rough

rough and unequal ; and also to make way for the Orifices of the little Vessels, with which its inward Substance abounds, to supply it with Blood, necessary to breed a new Flesh where-with it may be cover'd.

But the *Operation* which I have made upon it on many Occasions, and which I here propose ; appears to me to be more speedy, safe, and profitable, than *Rasping* ; wherein, the Instrument passing to and fro many times, on the whole Surface of the discover'd Bone ; heats it, and alters it much more, than the *Pin* of the *Trepan* ; which only slightly touches it at certain Distances ; and yet pierces so far, as to approach the middle Pith, from which we must fetch the requir'd Assistance. Moreover the *Rasp* lessens much the thickness of the Bone ; whereby those that have undergone that Operation, are subject to Pains in the Head : add to this, that it also leaves after it an unseemly Scar.

This *Operation* may be us'd, when the first, yea or both Tables of the Scull are broken ; providing no inequality be left on the inward Surface thereof ; that may occasion Accidents, which will appear in a small time : For if we delay to procure a covering to the Bone, the most subtil Part of the Matter may slide into the Fracture, and there cause some Alteration, or Inflammation, (for according to *Galen* and *Celsus*, the Bone is lyable to this Inconvenience)

ence) and also yet more troublesome Accidents. Now seeing the first Operation of this Nature which I perform'd, was on the Scull; I shall begin to Justify this Practice, by shewing how it is nourisht.

The Scull, according to the Opinion of many, has its Nonrishment from three different Sources: First, by Vessels proceeding from those of the *Dura Mater*, and passing into the *Cranium*, through its internal Surface, or that which is nearest the Brain: Secondly, from the *Diploe* or middle Pith, a medullary Juice is imparted to both Tables, whereby they are nourisht and sustain'd: And thirdly, by its external Part, it receives Nourishment from the *Pericranium*, wherewith it is every where cover'd and defended.

When therefore by some external violence the Bone is depriv'd of that Membrane, and remains uncover'd; 'tis certain that the Air by its Acid and Nitrous Points, takes hold on its outward Surface; and in a little time alters and rots it: and then it must needs exfoliate, because it is bereft both of its Nourishment, and Defence.

It becomes necessary then to make an Amends, and to draw Nourishment from the neighbouring Parts instead of that which is lost; that at the same time by covering it anew, may shelter it from external Injuries. Now this we can have from no nearer Place than

than the *Diploe* ; but in order to that we must give it an easie Passage, and open to it a Way to fulfil at once the *Intention* of *Nature*, and that of the *Surgeon*. This is accomplish'd by piercing the Bone, as we have said ; whereby the *Diploe* sends forth at these little Holes the most subtil Part of the *marrowy Juice* ; which congealing upon the Bone in three, four or five Days, sometimes sooner, sometimes later, intirely covers it.

Other Bones that have Marrow, are nourished from within, by the Vessels of the Membrane which cover that Substance ; and from without, by the *Periostum*, or Membrane wherewith they are invested : For this Reason we may perform this *Operation*, when there is occasion, on the Bones of the *Shoulder*, *Thigh*, and *Leg* ; and these who doubt of this, may be convinc'd by a Tryal.

That which ought to recommend this *Method*, and procure it an easie Reception; is that thereby the Cure is accomplish'd in twelve or fifteen Days, or so ; whereas otherwise it will take up near sixty ; for about forty Days are required to the Exfoliation of the Bone, and twenty more to fill up and cicatrize the Ulcer. Our Way is so exceedingly advantageous to the Wounded, that it ought not to be rejected ; nor can it, without offending against that *Charity*, we owe our afflicted Neighbour, who by the Delay in such Cases, is extremely endanger'd

ger'd, especially in an Hospital, where the corrupt and infected *Air* ruins in time the strongest Constitutions. I have often seen, and it is but too ordinary, that the Wounded Persons being cur'd, and just ready to depart from the Hospital, have been suddenly seiz'd by *Malignant Fevers*, *Looseness*, *Bloody Flux*, &c. occasion'd by their tedious stay in such dismal Places, and *Death* often has been the first thing that deliver'd them from all their Miseries. Therefore we ought to endeavour a speedy Cure, and to spare no Pains to prevent that tedious *Exfoliation*. But if the Wounded are sent to us with the Bone alter'd, or if we can't avoid this Accident with all our Care, we must endeavour to help on the Separation with all Speed: for as a *Gangreen* in Fleshy Parts wants the Assistance of Art to put a stop to it; so also does Rottenness, which is a *Gangreen* of the Bone; wherefore *Exfoliation* must be hastened by external Remedies, that it may go no further; for sometimes it extends from one End of the Bone to the other.

It is the Surgeon's Province, to pick out such Remedies as are proper for this Intention. The Ancients and Moderns have left us good store of this kind; but above all, we must avoid the use of Acid Spirits, which increase the Rottenness, and have the same Effect on a Bone, as *Aqua fortis* on Iron. The actual Caution is a great Help on these Occasions;

sions; as also *Euphorbium* infus'd in Spirit of Wine.

The Rules I have propos'd to prevent Exfoliation, are inconsistent with the Opinion of many Italian Surgeons, who maintain, that the Bone, so far as hath been touch'd by the *Air*, will infallibly exfoliate. I have heretofore had great Debates on this Subject with some People, who through a Stiffness of Opinion, without any Ground, would neither yield to *Reason*, nor *Experience*; not being able to bear what was contrary to their own Principles and Practice.

C H A P. XIII.

How to Dress with a New Instrument, after Trepanning, or Accidents of that Nature.

WOUNDS of the *Head* accompany'd with a Fracture of the Skull, are such as require an expert Surgeon: I am convinc'd, and I suppose none will deny it, that the *Air* is hurtful to them: in this both Ancients and Moderns are agreed.

'Tis certain notwithstanding that a great Part of the Accidents that follow upon them, proceeds only from the little Care that is taken,

ken,

ken, to hinder the Access of the Air into the Wounds, whether the Scull be only bared, or broken, or also trepanned. I have discours'd of discovered Bones in the foregoing Chapter; I have only two or three Words more to speak, of such Wounds, where the Scull has lost some of its Substance.

When the *Dura Mater* is uncovered, I prepare a Plate of Lead very thin, and very smooth, pierc'd with Holes in several Places, without any Inequality, cut and fitted to the Bigness of the Opening; and to make it more exact, I sketch it out with the Crown of the Trepan, that I have us'd, or am to use in this Operation: or its Measure may be taken from the Piece of the Scull cut out by the Trepan. On each side of this Plate is left a little Ear, somewhat longer than the thickness of the Scull; these little Ears I bend both one way, so as they may be perpendicular to the *Plate*; and so much of them as exceeds the thickness of the Scull, I bend outwards again, that thereby they may rest upon the Scull, and by which, as by two little Handles, I may lift them up with Pincers, if need be, at each Dressing; these two little Handles may be cut something broader, than the two pieces that joyn them to the Plate, which must be of an equal Breadth. When I use it, I dip it in some proper Medicine pretty Warm, and apply upon it a very soft Pledget of fine Lint.

I have found very much Good by this Method, and have observ'd a five-fold Advantage in the Use of this *Plate*. First, the *Matter* or *Blood* contain'd within the *Scull*, passes out at the Holes of the *Plate*, and is imbib'd by the soft *Lint* that I put over it: and if it has acquir'd any mischievous Quality by staying there, which often falls out, the *Lint* by which it is soak'd up, detains it from touching the *Dura Mater*, and imparting the Contagion thereto; and consequently, there is less Hazard of its Alteration.

In the Second Place, this *Plate*, by lightly pressing upon the *Dura Mater*, facilitates the coming out of the *Matter* or *Blood* extravasated under the *Scull*.

Thirdly, It hinders the breeding of a *Fungus*, and the bunching out of the *Dura Mater* beyond the *Scull*, which otherwise often comes to pass; obliging us either to cut off, or to consume with *Catheceticks* that which so stands out; whereupon very grievous Accidents sometimes ensue.

A Fourth Advantage is, that it hinders by its slight Pressure, the *Dura Mater*, in its continual Motion, to strike against the Inequalities and pointed Parts of the *Scull*; that remain after a Piece has been rais'd by the Operation of the *Trepan*, or intirely separated by some external Violence.

And Finally, it protects the Brain and its Mem-

Membranes from the Assaults of the Air, performing in some sort the Part of that Piece of the Scull that was taken away.

When we are assur'd that there is, or are in Doubt that there may be some coagulated Blood under the Scull, we may for some time omit the Use of the *Plate*, that we may leave it a free Passage; and afterward we may use it, until the danger of the Accidents is over; and then we must use it no longer: otherwise it may prove an Hinderance to the Reunion, and the Generation of the *Callus*.

When the Operation of the Trepan is perform'd on the *Basis* of the Scull, as is usual now to be done without Scruple, the bunching out of the *Dura Mater* is more to be fear'd; and of consequence this *Plate* is absolutely necessary to support it, and keep it in: but for the Operation on this Place, as well as for that on others, we must endeavour, as far as the Case will bear, to choose the highest Part; that the *Plate* may have the less weight to sustain. We may safely use it for fourteen or fifteen Days, if we Judge it needful; and it may be made of Gold, Silver, &c. according to the Desire and Ability of the Patient: but for myself I always use a leaden one; for every Body knows that this Metal is freindly to Nature, and is vulnerary and drying.

Tho' there were no other Advantage to be reap'd from the Use of this *Plate*, but only

E 2 .that

that it defends the Brain, and its Membranes, from the Insults of the *Air*, this were enough to recommend it to our Esteem. It is certain that the *Air* acts not with that Force, when its Acid Parts find a hindrance in their way, or when they must pass through such little holes as these of this Instrument: and sometimes I don't lift it up but in two or three Days, when it Matters freely, and the Accidents abate.

M. Verdue affirms, that the *Fungus* that breeds on the *Dura Mater*, is caus'd by the Attacks of the *Air*: in a word, all the *Ancients* and *Moderns* are of one Mind in this, that the *Air* is exceeding destructive to the Membranes, and to the Brain.

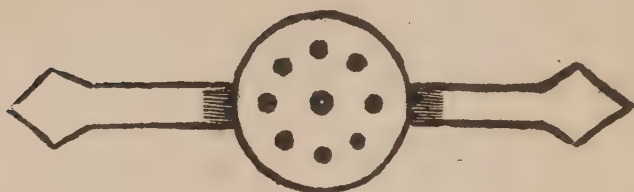
It is not then without Cause that *Nature* as a good and provident Mother, hath taken Care to encompass the Brain with two Membranes, the Scull, the *Pericranium*, the Teguments and the Hairs, on every Side, to cover it from the Impressions of the *Air*, which of all the Elements is most hurtful to it: and the most part of those that have been trepaned, or by a Fracture of the Scull have lost some part of its Substance, without having the Brain or its Membranes hurt, are subject to a number of very troublesom Accidents.

The Reason of this may be easily conceiv'd: for the *Air*, at certain Seasons, and in certain constitutions thereof, being indow'd with more piercing

piercing and subtil Parts, or the Skin being more relax'd; finds nothing sufficient to stop its Course, and passes, notwithstanding the *Callus*, which is never so solid as a Bone, to the Membranes, which are extreamly sensible of Cold, and there occasions these *Pains* that such kind of People are subject to.

That the Discription of the Plate, may be the Better understood, we have here subjoyned its Figure.

*The Figure of a Plate with Nine Holes, to be used
when the Crown of the Trepan is large.*



A little Plate with Five Holes.



*The Figure of a Plate ready for Use, with the
little Ears bent.*



THE

T H E

Hospital-Surgeon :

O R,

A New, Gentle, and Easie Way, to Cure
speedily all sorts of WOUNDS.

P A R T II.

*Further evincing the Excellency of this Way,
by a faithful and particular Account of
Wounds of all Kinds, and in all Parts of the
Body, thereby brought to a quick and happy
Cure ; together with Useful and Practical Re-
flexions.*

C H A P. I.

*The Reasons of Writing this Second Part ;
with a general Proposal of what it
contains.*

TH O' Sound Reason, supported by
Authority, may appear to be a
Proof of the Goodness of any
Thing, convincing enough, and ca-
pable to sustain the Weight of what Conse-
quences.

quences might thence be deduc'd ; yet does there oftentimes still remain an Uneasiness and Hesitation in the *Mind*, no otherwise to be remov'd, but by *Ocular Demonstration*, as it were, and *Experience* : for nothing so infallibly shews the Possibility of Things, as their having already come to pass ; nor can any Thing so well assure us, what will follow upon them, as a multitude of *Tryals*. 'Tis this Consideration that induc'd me in this second Part, to give a History of some *Wounds* handled according to my *Method*, that Justify my manner of *Practice*.

Had I thought it requisite, I cou'd have fill'd a great Volume with Cures that I have done these ten or twelve years, which were all brought to a happy Conclusion, and compleated in a very small time. But to avoid tediousness, I resolv'd to set down as few as possible. Yet in spite of my Design to relate only one of each sort, and each Part, I found my self necessitated to exhibit many ; of which tho' some at first may appear altogether alike ; yet if they be more narrowly scann'd, they will be found to differ in some very material Circumstances.

As for the Order observ'd in these Relations, I have followed that of the Dignity of the *Parts*, beginning at the *Head*, and ending with the *Extremities* ; not minding the Series of time wherein they happened. I have de-

scrib'd

scrib'd all things Just as they were, without either adding or diminishing; having no other Design, but to make the Easyness and Expedition of this Method appear, by the Examples I here relate.

CHAP. II.

Of the Head.

OBSERVATION I.

AFTER the War broke out in *Savoy*, there was brought to the King's Hospital at *Luferne*, where I was then Surgeon Major, in July 1690, a Soldier call'd *La Grandeur* of the Regiment of *Poudenx*, which is now that of *Gatinois*. He had received a Wound on the right Side of his *Head* with a pretty large *Bullet*; which grazing upon the most convex part of the Bone of the *Sinciput*; had only carried away the common Teguments, not hurting the Scull; but the *Membrane* that immediatly invests it was so bruise'd, that it appear'd livid. I know, if time had been given, it would have come to Suppuration; whereupon the Alteration and Exfoliation of the Bone must needs have ensu'd: to prevent which, I tear'd off with my Nails the *Pericranium* so far as it was bruise'd, being something more than the

bigness of a Silver Shilling; and forthwith I struck the uncovered Bone, in several Places, as nimbly as I could with the Pyramid of the Trepan; and then cover'd it with some Lint wet with Spirit of Wine: the rest of the Dressing was charg'd with a simple Digestive, upon which I put *Emplastrum de Botenæa*, and above all the Cap.

After two Days I took off the *Dressings*, and found the Bone covered with a lively Red, from whence I conjectur'd that it would soon be cloath'd with Flesh: two Days after this it was dress'd in like manner as before, and then the Bone was half cover'd over; for which Cause I let it alone for three Days more; so that in seven Days time the Bone was altogether hid with new Flesh, which was instead of a Membrane to it; and now nothing more was requir'd, but by dressing it every other Day to attend the Fall of the Escar. Finally, in the Space of eighteen Days, the Wound was fill'd up and compleatly cur'd.

REFLECTION.

If this *Wound* had been manag'd after the ordinary *Method*, I leave it to consideration, whither the Cure would have been so speedily accomplish'd. From that time forward, I ever kept to this *Method*, which I have us'd in many Occasions, and never found that the
Wounds

Wounds opened again, yea, or that Exfoliation, or any other evil Accident ensu'd.

This and the following Example I Judg'd sufficient to establish our Way of Dressing. And indeed seeing it has been attended with Success in such Cases, we ought to remain assur'd, that it will prove no less effectual in incised Wounds, and others also where the Bone is laid bare, whither by that which inflicts them, or by the Suppuration of the *Pericranium*. But we must observe, if the *Pericranium* is bruis'd or discolour'd, as in the preceeding Case, and Suppuration appear unavoidable; that the securest way is to tear it off, and speedily to uncover the Bone, that the foresaid Operation may take Place; whereby the Corruption of the Bone will be prevented, which might be occasion'd by the lodging of the corrupt Matter thereupon; and then the Operation would be too late.

CHAP. III.

Of the Head.

OBSERVATION II.

A Certain Soldier nam'd *Chasteau-montague*, of *Aligny's* Company in *Villars* his Regiment, together with a Companion of his in the

the same Company, was, during the Campaign in the Year 1694. brought to the Hospital establish'd for the *King's Army* at *Briançon*.

The first had receiv'd a Cut on the middle of the *Os Sincipitis* of the left Side, whereby the Bone was uncovered, to the bigness of a Silver Crown Piece. At the second Dressing I made eight or ten little Holes with the Piercer upon the discovered Bone, not reaching so deep as the middle Pith or *Diploe*, that I might make Trial, if I cou'd accomplish my Design, without piercing through the first Table. I apply'd upon the Bone so far as it was laid bare, Lint dipt in Spirit of Wine, dressing the rest of the Wound, with the simple Digestive, *Emplastrum de Betonica*, and the Kerchief.

I waited two Days before I dress'd it again, and then found that my Operation had not been without Effect. The Bone was become reddish, and the Holes made by the Piercer, to which this Effect was owing, began as it were to sprout forth; which made me conclude, that *Nature* would accomplish the Work she had already begun. For the first eight Days he was dress'd but four times, after which the Bone was wholly covered: and in eight or ten Days more, wherein he was dress'd but every third Day, the Wound was fill'd up, and a good and firm *Cicatrix* formed

med. He came into the Hospital on the 25th of *May*, and upon the 11th of *June* he went out perfectly cur'd; all that were therein being Witnesses of the Operation, and the Speediness of the Cure.

His Companion had several *Cuts* over all his *Head*, which he had received in the same Occasion, but especially a deep one upon the upper and middle part of the *Forehead-Bone*. Finding that in none of them the *Scull* was fractur'd, I judg'd it sufficient to joyn together their Lips; only in the last, during the first Days, I left two small Threads of Lint dipt in Spirit of Wine, with the Ends hanging a little out of the Wound. Four Days after, I caus'd to be remov'd whatever might hinder the reuniting thereof, dressing only once in three Days, because no Accident appear'd.

The Suppuration in this last *Wound* was but very inconsiderable; and no Bones came away, neither was there any Exfoliation: So this Man also was cur'd, and return'd unto the Regiment with his Companion.

REFLECTION.

Had I only recounted one *Cure* of this Nature, done in a place at a great Distance from *Paris*, the Truth thereof might readily enough have been call'd in Question: But these,

these, with many others of the like kind, having been publickly perform'd in an *Hospital*, to which every one had free Access, and as it were in view of the *World*, ought not only to remove all Scruple as to the Truth of the Matter of Fact, but also to establish the Reputation of a *Method*, attended with Expedition and Security. The Excellency and Usefulness of the little *Operation* perform'd upon the uncovered Scull off the first Man, may be easily made apparent to every one; being founded on *Reason* and *Experience*. *M. Jouve*, a very expert Physician belonging to this Hospital, was an Eye-witness of the happy Success of these last *Cures*; he having been present from the Beginning to the End.

I should but weary my Reader, and my self also, if I should go about to reckon up the number of those, who in three Years time, with a surprizing Quickness, have in this Hospital been cur'd of Wounds of the Head; as well such wherein the *Scull* was cut more or less, as those wherein it had lost of its Substance.

I am not the only Person, who hath conquer'd Scruples commonly enough entertain'd about Wounds of the Head. *Ambrosius Paræus* reports, that he cur'd in a small time a certain Person, that with an edg'd Instrument, had a large piece of the *Forehead-bone* intirely separated, and hanging over upon the
Face,

Face by the Skin only ; which yet was easily enough reunited.

In the *Skull*, as in other *Bones* of the Body, when a Piece is separated, whether by a Cut, or Fracture, so as yet to adhere to the encompassing Membrane ; it is sufficient artfully to restore it to its natural Place, in such a manner, that it may have the same Situation and Disposition as formerly ; that so the Pores may answer, and the *Nutritious Juice* necessary to form the reuniting *Callus*, may be freely admitted ; which could not be done without extreme Difficulty, if it were placed either too high, too low, or aside ; in which Cases, the natural Order and Situation of the Part being alter'd ; it is impossible it can sit so close to the Bone from whence it was divided, but that many little Distances must intervene, that are liable to be fill'd with *Lympha*, Blood, or Matter, or all three together ; which alter the wounded Part, corrupt its Aliment, and bring that Membrane to Suppuration, by which only the divided Part was tyed : So that Nature must now of Necessity throw it off, as an *Extraneous Body*.

From hence we may readily conclude, that it is not at all necessary, to permit *Wounds* of this kind to come to *Suppuration*, or to keep them open in Expectation of the coming away of Bones, which, without Danger, may be avoided.

This

This our *Method* is also confirm'd, by the Authority of *Rhasis*, and *Serapion*, Authors celebrated by Antiquity ; who treating of *Wounds* of the *Head* accompany'd with a *Fracture* of the *Skull*, tell us that it was their Custom to stitch them, even when the *Fracture* pass'd through both *Tables*. *M. Verdue* also in his first *Volume*, *Chap.* 18. *Of Wounds in the Head*, makes mention of a *Fracture* of one of the *Ossa Sincipitis*, that reach'd from the *Sagittal* to the *Lambdoidal Suture*, which was cur'd without the Assistance of *Operation*.

The *Diploe* or middle *Pith*, plentifully supplies the *Skull* with Nutricious Juice ; from whence it is, that when broken it is more easily united, than any of the other *Bones*, tho' yet its *Callus* is less firm : And providing the *Brain* with its *Membranes* are safe, we need not fear any *Danger* from the *Fractures* of the surrounding *Bone* : But tho' this may sometimes fall out ; yet is it scarce to be expected, but that the violence that occasions a *Fracture* in the *Skull*, should by the sudden *Jolt* or *Concussion*, produce some *Disorder* in such a soft glandulous Body as is the *Brain*. Great Carefulness therefore and Attention is here requir'd : for a *Rupture* of the *Vessels*, or a *Dilatation* of their *Mouths*, that are frequent enough in such Cases, and cause *Effusion* of *Blood*, don't appear at first ; as I have oftentimes observ'd : but so soon as the *Accidents* begin.

begin to shew themselves, Operation must not be neglected.

It will possibly be objected, to what I have said, concerning carefully placing the broken piece of Bone, in the same Situation it had formerly ; that the Bones of other Parts of the Body may be reunited by Means of a *Callus*, even when so ill plac'd, that there is a necessity of breaking them anew, in order to restore them to their natural Figures. But the Answer is easy ; for there is a Difference between the former Case, wherein a Piece or Splinter of Bone is separated from the whole ; and this, where the Nutricious Juice, that comes from the One as well as the other Part, meets, diffuses it self, and coagulates about the Fracture, and so forms that which we term a *Callus* : but in the other Case, the Alimentary Liquor proceeds, and is communicated from one of the Parts only ; and if it find no Pores rightly dispos'd to receive it, there being nothing to which it can Joyn it self, it is alter'd and corrupted ; and the loosened Piece shares with it in the same Fate.

As for the Operation of *Trepanning*, which I have often perform'd, seeing nothing extraordinary hath therein occur'd, I will pass it over in Silence.

C H A P. IV.

Of the Head.

OBSERVATION III.

ABout the Conclusion of the Year 1689, a little time before the War of *Savoy*, the *Vaudois* cut off almost all the Inhabitants of *Pramol*, which depends on the Valley of *St. Martin*. I was at that time Surgeon Major to the Hospital of the Army of his Royal Highness the *Duke of Savoy*: Thither were brought a great number of Men, Women, Maids and Children in a most deplorable Condition; and among others a *young Girl* about nine or ten years of Age, who besides others in the Body and Arms, had received eighteen or nineteen blows on the *Head* with a Cutlass, each whereof had pierc'd the *Scull*, some even to the *Dura Mater*; some Pieces of the *first Table* were carried away, and some of *both Tables* intirely seperated.

I caus'd in the first place, such Parts to be shav'd as wou'd bear it; and afterwards I gently rub'd the whole Head, with a Liniment made of *Unguentum de Betonica*, the Yelk of an Egg, and Spirit of Wine, mix'd together: in this mixture also I dipt large Pledgets, with
which

which I cover'd all the Head, without either Tents or Dilaters; above these I put *Emplastrum de Betonica*, and over all the ordinary Cap.

What her Age and Strength would allow, was done for diverting the Humors; and the first Dressings were left untouch'd for two Days; which Method was continu'd for fifteen Days: when we took off the Plaister, almost at every Dressing we found Pieces of Bone sticking to the Pledgets: What was altogether separated, came away with Ease: And in fine, such Bones as yet adher'd to the *Pericranium* were reunited, and what was wanting in the *Cranium* was speedily supply'd. When I perceiv'd the Suppuration to diminish, I dress'd but once in three days. This Course I found so successful, that in the space of about five weeks the Cure was perfectly accomplish'd. This poor wounded Girl, was known to almost all *Pignerol*; being very remarkable by the loss of one of her Ears, which she had sustain'd in this afflicting Occasion.

REFLECTION.

This Cure is altogether to be ascrib'd to Nature, as being intirely her Work: and had not great Circumspection been used, in prohibiting the access of the Air, in this Case, where the very Membranes of the Brain in
several

several Places were discover'd, it could not have had so speedy, easy, and successful an Upshot; especially had it been manag'd in the *ordinary Way*: For besides that the Cure would have been unsufferably tedious; a thousand dangerous Accidents might have arriv'd chiefly in an Hospital, where long-winded Cures are seldom attended with success. In fine, notwithstanding the Novelty that may be charg'd upon this Method, it is supported by the Authority of *Hippocrates*; who, *B. 5. Aph. 17.* affirms that the *Air* is an Enemy to the *Brain*, the *Bones*, the *Nerves*, and to our Nature in General. *Galen* in his Book *De usu Partium*, ch. 1. says, that the *Air* is prejudicial to *Ulcers*, by which word he understands all Sores; and adds, that in trepanning we ought to take special care not to cool the Brain as well during the Operation, as when it is over.

The Access of the *Air*, is not only hurtful to the Wounds of the Scull and Brain; but also to those of the other parts of the Body; in which the Accidents are neither so sudden, nor so violent; yet ought they to be regarded with all necessary Care: for if you ever so little neglect the Conservation of the *Natural Heat* and *Spirits*, the wounded Member must needs fail, and frequently the Owner also shares in the same Destiny.

C H A P. V.

Of the Face.

O B S E R V A T I O N IV.

I N the year 1689. I being in the same Post, and at the Place before mention'd, when the *Vaudois* were driven from the Valleys of *Lusarne*: A certain *Officer*, whose name civility obliges me to conceal, was wounded with a broken Sword in the left Cheek, towards the corner of the nether Jaw, about an Inch below the Ear; and the *Ductus Salivales* were torn.

He was at first dress'd by a Surgeon, who according to his usual manner, dilated the Wound, by thrusting into it as much lint as it could contain. A considerable time pass'd, without any appearance of a Cure, and by little and little it became fistulous. I was call'd by the wounded Person to give him my Advice and Assistance: and forthwith I consum'd the Callosity, by touching it nimbly with Tents dipt in dissolv'd Causticks: I caus'd him to be fed with Jelly-broth to be taken with a Quill, that there might be no occasion to move the lower Jaw; ordering him also to keep himself very quiet, without either speaking or moving: and when all the Callosity

fity was taken off, I apply'd to the Wound the Balsam of *Peru*, and pressing together the Lips with long slender Bolsters, I covered it with the Styptick Plaister of *Crollius*. Thus he was cur'd, not without difficulty; tho' at first it might have been done with great Ease.

C H A P. VI.

Of the Face.

OBSERVATION V.

BEing in *Pignerol* in the year 1691, the Chevalier *Vauban*, a Captain in the Regiment of *Beaujolois*, sent for me to see his Brother; who was run with a Sword into the Cheek: The Wound had been dress'd by a Surgeon, who at first thrust into it a *Tent* both thick and long, which pass'd into his Mouth; and continuing the same Method for six or seven Days, the Patient was thereby thrown into a violent Fever; and his Head and Face were exceedingly swell'd, by reason of the great Flux of Humors.

After we had laid aside the *Tent*, we found it necessary to have recourse to such Means as might divert the Humors; but the Accidents, which so great an Irritation of the Parts had occasion'd, could not be easily remov'd; nevertheless

vertheless they were at length conquer'd, tho' not without difficulty; and by means of *Sarcoticks* we compleated the Cure: but an ugly Scar remain'd behind, occasion'd by the inconsiderate use of the *Tent*.

REFLECTION.

The *Face* being the Image of God, and as it were an Abridgment of all the Beauties of *Nature*; which as a little World representing in Miniature, what is more voluminously display'd in the great bulk of the vastly-extended Universe; ought doubtless to enjoy some privilege over the other parts of the Body: Hence it is that all the Authors both Ancient and Modern, tho' for the most part they have allowed the use of *Tents* in all other Wounds, yet have they unanimously condemn'd it in those of this *Part*; which nevertheless have been cur'd with wonderful Facility, and by the use of the very weakest of *Sarcoticks*.

Fabritius ab Aquapendente, in Wounds of the *Face* recommends the use of the dry Stitch, to avoid the deformity of a Scar: and indeed, seeing we are to preserve the Beauty of the Countenance as much as possible, they are to be accounted very unskilful Surgeons, and but ill instructed in what belongs to their Business, who employ *Tents* in such occasions: The *Saliva* seems to be that Balsam which is peculiar

peculiar to the Face, assigned thereto by Nature, that has also granted to all the other Parts one proper to them.

C H A P. VII.

Of the Tongue.

OBSERVATION VI.

IN the Year 1689. A Lieutenant of the Militia of *Mondevi*, having his Mouth open, as he gave orders to his Soldiers, in an Encounter, receiv'd a Bullet that broke and tore all his *Tongue* into five or six pieces, which were not altogether separated, but stuck together on the upper part. He was carried to the Hospital of *Luferne*, and forthwith there dress'd by *M. de la Ramee*, Master Surgeon at *Turin*, and skill'd in his Employ : But finding that with all his Care, he was not able to stop the Flux of Blood, which was considerable, he desir'd my Advice in this affair.

Having search'd his Mouth, in order to discover from whence the Blood came, I found the Bullet lodg'd under one of the corners of the lower Jaw-bone, having only fretted the Skin of that part ; and finding no other Place from whence the Blood could come, but these Veins under the Tongue, call'd *Ranulares*, I proposed

posed to heat red hot three of these small cauterising Irons, which are us'd for the Teeth, and to apply them to the *Ranulares*; which being accordingly done, the Bleeding was stopt, and the wounded Person speedily cur'd.

REFLECTION.

The *Ancients* have ordered to stich the Wounds of the *Tongue*, unless the pieces be altogether separated, in which Case the Operation is to no purpose, and the Reunion impossible: *Fabricius ab Aquapendente* is of the same Opinion: but as for my self, I can see no manner of necessity for such Stitching; seeing *Nature* alone, when left in Repose to her self, does excellently accomplish the Uniting of the divided Parts without it. Every body knows, that the *Tongue* is situated in the *Mouth* under the arched *Palate*, and made up of innumerable little nipple-like Bodies, encompass'd on all sides by the *Teeth*, and supported in such a manner that its parts are kept together, and cannot fall asunder. The Spittle is its *Balsam*, and oftentimes the only Remedy necessary to cure its Wounds. This is what I have observ'd in the preceeding Cure; for this Gentleman's Tongue was, after some small time, altogether so well, that scarce any Signs of the Division of its Substance could be discern'd; but whereas it had

F

been

been torn by the *Bullet*, and scorcht with the *Cautery*; it must of necessity have lost of its Substance; nevertheless *Nature* found the way to make up what was wanting, and to effect a compleat Union of the divided Parts: from whence I have Reason to conclude, that what the Ancients have left us in Writing is not always true.

I have dress'd a great many with Fractures of the lower Jaw-bone, but chiefly two Soldiers who were wounded in that part at the Battle of *Marseils*, One of whom had more than half of the Bone broken to pieces; who nevertheless were perfectly cur'd, as others had been: they are at this time amongst the Invalids, being disabled, and much deform'd. Of these I will not speak more particularly, having observ'd nothing Extraordinary in their Case.

C H A P. VIII.

Of the Neck.

OBSERVATION VII.

IT would be both tedious, and unprofitable, here to relate Examples of Wounds in the Neck, of which I have cur'd a great number, in very little time, and with *Simple Remedies* only.

only. I have also several times taken out *Bullets*, which have been lodg'd there for some time, yea many Years. I shall content my self therefore to give my Thoughts of what I judge necessary to the speedy Cure of Wounds of this part, in the following Chapter.

REFLECTION.

All the *Ancients* agree in this, that Wounds of the *Neck*, tho' passing quite thorow, are easily enough cured, provided the great Vessels, and Spinal Marrow be not hurt: But they give no sufficient *Reason* for their *Opinion*. I know not if I have hit the Matter aright; but in my Opinion it proceeds from this, that the use of *Tents* has been laid aside, which in the Wounds of this Part cannot be employ'd, because of the necessary Uses of the *Wind-pipe* and *Gullet*, that would be hindered by so hard a Bandage as is requir'd to keep in a *Tent*.

It is therefore, according to my Opinion, *Nature* her self, who being freed from Impediments, speedily heals up the Wounds of the *Neck*; and this greatly confirms the Reasonableness of my *Method*; for those who fear, lest the Omission of *Tents*, should bring on Abscesses, Bags, and Sinuses; have more Rea-

son to apprehend such Accidents in the Wounds of this, than in these of any other part.

'Tis well known that this part is obnoxious not only to the *Bronchocele*, Afflux of cold Humors, and Quinsie ; but also to *Phlegmons*, *St. Antonies Fire*, and all other Indispositions in general that afflict the whole Body : for this Part, by reason of the Glands, that here are very numerous, is always charg'd with abundance of Humors, which render it subject to all such Disorders as proceed from these thrown out upon the parts.

It must also be own'd, that there is not any Part in all the Body, which in proportion to its bigness, contains any thing nigh so great a Number of *Blood-Vessels* as are here to be found.

And in fine, if it were true that the use of *Tents* would prevent Fluxions, Collections of Matter, Bags, and Sinuses ; I know no other place of the Body, that when wounded, would be in more need of them, than the *Neck* ; which is extreemly subject to such Accidents.

Wherefore, since Wounds of the *Neck*, that of all the Parts is most liable to dangerous Symptoms, may not only without *Tents* be cur'd, but even much more safely and speedily than with 'em ; we may conclude that these of other Parts, ought to be treated also with the same Gentleness, and set at Liberty from the Tyranny of *Tents*.

C H A P. IX.

Of the Breast.

O B S E R V A T I O N VIII.

Being at *Pignerol* in the Month of *April*, 1692. *M. de Fontaniere*, Commander of the King's Battalion, received a Thrust with a Sword, about two Inches above the right Nipple, and in the Side thereof towards the Arm-pit, which enter'd the Body between the third and fourth Rib.

He was dress'd by one of the Surgeons in *Pignerol*; before which he had lost, according to conjecture, about between seven and eight Pounds of Blood; and notwithstanding of the Dressings, the Flux of Blood did still continue; for which Reason I was sent for by the Wounded Person and his Friends. I search'd the Wound in presence of him that had formerly dress'd it, and drew from it between eight and nine Ounces of Blood: And lest at first I should appear ridiculous, I permitted it to be dress'd with a *Tent*, and immediately after caus'd him to be let Blood; and advised his Friends to dispose him, to set his Affairs in Order. All the signs were dangerous; his Pulse was weak and convulsive, he had frequent Swoonings, and Pains over all his Body. A Clyster was given him, and some weak Cordi-

als in good Broth. A little after the Bleeding, he was seiz'd with a *Fever*: and all these Accidents concurring, made us question whether he could outlive that night; which yet he did in great pains over all the Breast, and perpetual restlessness.

In the morning, which was the end of the first Day of his *Wound*, we took off the Dressings; and found that it had bled all night; between six and seven Ounces of Blood half corrupted issuing from the Wound, which was dress'd as the Day before. The *Clyster* was repeated: we gave him *Aperitives* and *Vulneraries* in Syrup of Violets: And in his Broths a *Diaphoretick* made up of some grains of *Vitriol calcin'd*, and the powder of a *Human Scull*, which gave no small Relief, being a *Specifick* in such sort of Wounds.

After the Dressing, the Blood yet run from the Wound into the Bed; and as we were preparing to Bleed him again, news were brought him, that he behov'd to change his Lodgings; and for his greater security, to some Place at a considerable distance from that where he was. In this occasion, his Removal threatned no less than Death; for this was but the beginning of the second Day of the *Wound*. I was willing to see it before his Departure, tho' it had been dress'd but a little time before: but having perceiv'd, at the last Dressing, that some Blood run from one of these Arteries that pass

pass along the lower part of each Rib; and having only out of complaisance continued the Tent, I design'd to use one of another sort than had been yet done, seeing there was now no time to loose.

I prepar'd therefore a soft Tent, indifferently thick, and blunt at the end, that it might rest upon the Rib, without touching the *Pleura*, or passing into the Cavity of the Breast: This being dipt in a simple Digestive, and roul'd in Vitriol finely pulveriz'd, I apply'd with a broad head as is usual, together with the rest of the Dressings, and the Plaster of *Andreas a Cruce*. After having taken some Broth, he was put into a Chair and carried to his new Lodgings, where he might remain more conveniently: By the way he only lost a little Blood, tho' many had been of Opinion, he could never come alive to the end thereof.

He rested a little that night; and in the Morning, which was the end of the second Day, the *Fever* was still pretty violent; the *Wound* was without Moisture or Blood; the *Pleura* was reunited: he felt a Heaviness, and breath'd with some difficulty. The *Wound* we dress now with a small Dilater only, to which for more security a long thread was ty'd, applying the other things as before. I bled him in the Arm; and encreasing the Dose of the Diureticks with the Syrup of Maiden-hair,

order'd an *Emulsion* to be taken at night with two Grains of *Laudanum*.

All these things succeeded so well, that the next Day, which was the end of the third since he was wounded, I found the Fever diminished : He breath'd more freely; felt little or no heaviness; and in the Night time had voided such abundance of *Urine*, that we may reasonably enough suppose this to have been a *critical Evacuation*; he had also spit store of bloody Matter. The Wound being now in a very good condition, from this time forward I dress'd it with a Plaister only.

At night I observ'd a Moisture upon him; which made me believe, that *Nature* might accomplish the rest of her work by *Sweat*. Wherefore, that I might not let slip so favorable an Occasion, and to assist Nature, I caus'd prepare for him a Potion with the distill'd Waters of *Carduus benedictus* and of *Scabious*, four Grains of *Diaphoretick Antimony*, half a Dram of the Confection of *Hyacinth* and of *Alkermes*, a little of the Powder of *Vipers*, and two or three drops of the Spirit of *Sal-armoniack*. This Remedy being given so seasonably procur'd a thorough *Sweat*; and in the Morning, which was the end of the fourth Day of the Wound, the Fever was gone; the weight upon the *Diaphragm* remov'd; and he breath'd without difficulty: and finally, all these Symptoms being evanish'd, the Wound was only drest

dress'd with a Sarcotick Plaister, as if it had been a simple Excoriation.

The Day after, which was the fifth of his Wound, he mounted his Horse without help, and went to *Diblon* for a more pure and temperate Air; where he no longer kept his Bed, tho' he found not thereby the least Inconvenience. There I purg'd him twice, which was done not out of any absolute necessity thereof, but as an expedient precaution: I advis'd him also for a time to live somewhat moderately. Thus that *Wound* which appear'd to us at first *Mortal*, and was attended with a numerous train of *dangerous Symptoms*, was in five Days time compleatly cured, to the Amazement of all *Pignerol*.

REFLECTION.

This Method of Practice, will appear at first to be ridiculous, and rash, to those who have not considered so much as I have done, the surprizing Works of *Nature*; nor these secret Passages she finds out, to discharge her self of what is troublesome to her in like Cases; nor how in particular she oftentimes effects a *Crisis* by the way of *Urine*.

But seeing experience has frequently taught us, that an *Empyema* in the Breast, has been carried off by means of *Diureticks*, the Matter, as the Ancients thought passing to the Urina-

ry Vessels through the *Vena azygos*, but much more probably through *Ways* to us yet unknown; why may not a little extravasated Blood contain'd in the cavity of the Breast, or lying upon the Diaphragm, be discharg'd by the same *Ways*, or by those of *Sweat*, especially if Nature be therein assisted by the use of *Diaphoreticks*?

By these *Ways* then, now mention'd, the Breast may be sufficiently freed from Humors that Oppress it; chiefly in a young and vigorous Body: neither is there now Place for any to doubt of this, of which so many People in our Days have been Eye-witnesses, who can yet testify the same.

Wherefore, there is no Reason to be so obstinately bent, for using *Tents* in Wounds of the Breast; unless it be to carry *Astringents* to some place, whether otherwise they could not reach; or to support and keep them on: But in all other Cases they ought intirely to be laid aside: For by exasperating such parts as they touch, they are apt to renew the *Flux of Blood*; they hinder the *closing* up of the *Wound*; and by widening the *Division* of the *Pleura*, occasion an *Inflammation* thereof.

It also frequently falls out, when a *Tent* is something long, that it touches the Lungs, and bruises 'em by reason of their continual Motion, and beating against its Point; yea oftentimes it enters into, and divides their Substance, making

making its way through the investing Membrane, now brought to Suppuration. In Wounds also where the *Lungs* are not spoil'd, there being only a simple Division of their Substance with a sharp Instrument, a Tent may increase the Separation, and by irritating the Parts, cause a discharge of Humors thereupon, and great Suppurations, which end ordinarily in incurable *Fistula's*.

Moreover a *Tent* presses upon the Muscles of Respiration, and permits not the Patient either to cough, spit, or breath freely: It hinders the Circulation of the Blood, by bearing on the Vessels; so that the wounded is in danger of Suffocation, by the collection of *Blood*, *Matter*, or *Phlegm*, and oftentimes of all three together; unless they are by some Means discharged: But if there is not a sufficient quantity of one or all of these, to produce such an Effect; and if the *Lungs* are yet at liberty to perform their wonted motions, yet these Humors will there ferment, and corrupt; and occasion putrefaction in the parts that contain em.

But after all, this Accident may sometimes have an happy Event; and a bad Cause may by chance produce a good Effect. For our Body, as we are inform'd by *Anatomy*, being nothing else but a Contexture of Vessels; it may happen in Wounds of the Breast, that the Blood or Matter collected in the Substance of the

the *Lungs*, or upon the *Midriff*, may there undergo a Fermentation, and thereby, together with the Heat and Moisture of the part, open and dilate the Pores of the Veins; whereby these Humors being taken into and mixed with the Blood, rarify, subtilise, and dispose it to throw off the *Offending Matter*, either by Sweat, Urine, or other *Crises* of alike Nature, according to the Disposition of the Body.

And surely we need make no great difficulty, to believe that such a thing might happen in a Wound of the Breast, if we will consider what befell *M. de la Place*, a Captain in the Regiment of *Barrois*, who voided by Stool the *Matter* of a great *Abscess* in his Arm, occasion'd by a Wound he had received in that Part; of which we will give you a particular account in the last Chapter of this Book; as also of another wounded in the last Campaign, from whom the *Matter*, that was contain'd within the Breast, was drawn away by opening the *Vena Mediana*, with a design only to let Blood.

In fine we may say; tho' the ways by which these *Crises* were effected are not altogether known to us; yet it is very certain that there are such: and seeing *Nature* is not ignorant of them; we ought to leave to her conduct, the Success of a Work, whereof she ought to have all the Honour, and which she alone brings to

to pass; our part being only to wait upon her, and assist her in her Design.

Galen in his 5 Book *de locis*, hath observ'd that Matter contain'd in the *Breast*, is oftentimes carried off by *Urine*, the same thing also he affirms in his 6th Book *de partium Morbis*.

Andreas a Cruce, a famous Physician of *Venice*, in the first Section of his fourth Book of *Surgery*, in express terms forbids the use of *Tents* and *Pipes* in the *Wounds* of the *Breast*; he advises only to use a *Plaster*, the Advantage of which I have thorowly experienced.

Fabricius ab Aquapendente, Part I. Book 2. Chap. 42. says, that he has often seen the Matter contain'd in the *Breast* in a *Pleurisie*, or *Peripneumonia*, discharg'd by *Urine*. He relates an Authentick History of a *Wound* piercing into the *Cavity* of the *Breast*, which having been dress'd as a simple One of the common *Teguments*, the Patient was on a sudden surpriz'd with such Symptoms, as plainly discovered the Nature of the *Wound*. That he might be relieved with as much ease as possible, and not put to the torment of a *Counter-opening*, it was thought expedient to dilate the *Wound*; but it was so well clos'd up, that the *Operation* of the *Empyema* was resolv'd on next Day. But during the Night *Nature* had accomplish'd the Work; a *Glass* full of *Blood* being voided by the *Urinary Passages*, whereby the *Spitting of Blood*,
Difficulty

difficulty of Breathing, and all the other Accidents were compleatly remov'd.

The *same Author*, recommends on such Occasions, the use of strong Diureticks, unless a Fever hinder : and in the above-cited Chapter, he says, that there are some, who will not allow Wounds of the Breast to be kept open, but suffer them to close ; lest otherwise the *Natural Heat* might be dispers'd, and the *cold Air* should enter in, and spoil the neighbouring Parts : He adds, that the Use of *Tents* occasions *Fistula's*.

Ambrosius Pareus, Book 10. Chap. 32. approves the Practice of those, who make use of *Tents* in Wounds of the Breast ; and elsewhere commends such as employ them not : so that as to this Point he seems to have been undetermin'd, and inconsistent with himself.

In the same Chapter also, he speaks of a Cure done by himself without *Tents* ; and afterwards he affirms, that *Fistula's*, which follow upon Wounds of the *Breast*, are oftentimes occasion'd only by the Use of them. The same Author, in the 51th Chapter of the 17th Book of his *Treatise of Matter and Blood* that may be carried off by the *Veins*, demonstrates by many Reasons that such an Evacuation may be ; and shews that *Galen* was of the same Mind.

Hollerius in his Commentaries, is of the same Opinion ; and *M. Verdue*, Tom. 2. chap. 28. affirms

affirms that Wounds of the *Breast*, the more they are exposed to the *Air*, are so much the more dangerous.

It would be a very tedious task to recount all the *Authors*, that have approved of this *Method*, altho' it is but little put in *Practicc*: And it would be a very easie Matter to bring many Examples, of Cures wrought by *Nature* through secret and occult passages conveying *Humors* and *Matter*, into other *Parts* than what were first affected.

C H A P. X.

Of the Breast.

OBSERVATION. IX.

ABout the end of the Year 1693, there was brought to the Hospital of the King at *Brainson*, a *Granadeer* of the Regiment of *Touraine*; together with a Servant of *M. De Lesserraine* formerly *Commiffary* at *Pignerol*.

The first, was run into the side-part of the *Breast*, between the third and fourth *Ribs*, with a *Sword*, which past into the capacity of the *Thorax*, and pierced the *Lungs*. The usual *Symptoms* appear'd at first; and *Diversions* were made. The first and second Day, some *Blood* came from the *Wound*; which was only
dress

dress'd with the Plaister of *Andreas a Cruce*, without either Tent or Dilater. Diureticks also and Diaphoreticks were us'd; and upon the fourth Day he voided great abundance of *Urine*: by which *critical Evacuation*, he was freed from the Fever, Difficulty of Breathing, weight upon the Midriff, and spitting of Blood: and on the fourteenth Day he was compleatly cur'd.

The Other had received just such another Wound, piercing in like manner; only higher by one Rib: The *Symptoms*, were so violent, that tho' it was immediately dress'd, yet was there no hope of Cure. He was treated after the same manner as the former: But he was much more speedily cur'd, by means of an universal Sweat; whereby that very Day all the Accidents were remov'd. In eight Days time, he went out from the Hospital intirely cur'd.

Were I to give a particular account of the numerous *Cures* of alike nature, that have been done according to this *Method*, there would be enough to fill a great Volume; all which were neither attended with any evil Accidents during the time of the Cure, nor followed by any after it; nor did they ever leave *Fistula's* behind 'em. I shall speak of *Gunshot-Wounds*, in the following Chapter.

C H A P. XI.

Of the Breast.

OBSERVATION X.

IN the Year 1692. there was brought to the foresaid Hospital of *Brianſon*, a Priſoner of the Army of *Savoy*; who was wounded with a Bullet, that entred near the right Pap towards the Arm-pit; and paſſ'd out of the Body four Finger's breadth from the ſixth Ver-tebre of the Back; having in its way broken aſunder the fourth Rib.

I enlarg'd both the Orifices, but a little more that of the Back, which was ſomewhat lower than the other. We dress'd him only once a Day at firſt, without either *Tents* or *Dilaters*; and from the hinder Orifice came forth a certain thin watery Humor; which E-vacuation continued till the falling of the E-scar; after which time he was dress'd only once in two Days. I kept the laſt mention'd Ori-fice open from time to time by means of a piece of prepared Sponge; conjecturing, that there were ſome Splinters of Bone to be diſ-charg'd; which accordingly came to paſs without any pain, about the eighteenth Day of the Wound: from that time forth I endeavour'd

your'd to heal it up, applying between the Orifices Compresses, dipt in warm Wine. During this Cure, I could observe no sensible *Crises* ; nor did any Accident happen: It was finished in thirty Days.

REFLECTION.

In this Wound the *Lungs* were untouch'd, for any thing that appear'd ; a Rib only being broken, and the *Pleura* hurt : which indeed had been sufficient to produce fatal Accidents ; had any other Method been followed : for if in this Case, *Tents* had been used ; or had the Wound been cram'd full of *Dossils*, as has been often done on such occasions ; the *Matter* proceeding from the Dissolution of the Escar and the Contusion, being pent up between the two Orifices, and still encreasing, and finding no Vent ; would infallibly have broken into the Cavity of the Breast ; from whence it could not have been drawn forth, but by the Operation of the *Empyema*.

An Accident like unto this, happened this Year to a famous *Officer* of our Army in *Savoy* ; who having receiv'd a Wound which was thought to peneteate, and really did so, was dress'd with *Tents* ; but the *Matter* finding the Way, by which it should have been discharg'd from the Body, altogether intercepted ; and passing among the broken pieces of a fractur'd Rib, diffus'd it self into the Capacity of the
Thorax :

Thorax : And in this Condition he dyed, having his Breast full of Matter.

C H A P. XII.

Of the Breast.

OBSERVATION XI.

UPon the twelfth Day of June, 1693. The Marquess *De Larray*, Lieutenant General, took by Storm a Post in the Valley of *Barcelonetta* ; and in this Occasion, had five and twenty, or thirty Men wounded ; who were brought to our Hospital of *Briançon* : and among others there was one call'd *Simon Contaut*, of the Regiment of *Vendosme*, and Company of *Berole*. This Man had receiv'd a Bullet, which went in hard by the sixth *Vertebra* of the Back ; breaking in its Passage the transverse Process on the right side ; and came out on the fore part of the *Thorax*, between the second and third Rib towards the left side.

This Wound was attended, with all the most dangerous Symptoms, that use to appear when the Lungs are wounded ; being one of the most considerable that had been under Cure in this Hospital.

There

There was not here any need of dilating the Orifices ; the largeness of the size of the Bullet, having done it to some purpose : The Wounds were dress'd without any Tent, but only with large Pledgets, and a good agglutinative Plaister ; the Compresses and Bandage being such as is usual. Diversions were made without delay ; and a course of Diet appointed : He was dress'd but once a Day, and that with all possible Speed.

The hinder Orifice of the Wound did blow with such force, that all the By-standers were surpriz'd thereat ; and such a prodigious quantity of Water did issue from it, that oftentimes it was necessary to change the Linnens twice a Day. Diuretick and vulnerary Potions were given.

This large Evacuation, continued for about twelve or fourteen Days ; after which the wounded Person was dress'd but once in two Days. The twentieth and first or twentieth and second Day, the Opening of the *Pleura* on the Back was perfectly clos'd up ; that before having preceeded it some Days. There was nothing came away that we could observe, either from the broken Process, or the Ribs that had been touch'd in the passage of the Bullet : and in thirty five Days, or thereabout, the Orifices were both intirely fill'd up.

REFLECTION.

This wounded Man was sent to the Hospital, as one of whom all hopes had been laid aside: for the Surgeon Major of the Regiment, who at first dress'd him with great Care, told his *Captain* that his Death was inevitable.

This same *Captain*, about a Month after coming to *Briançon*, with the Lieutenant Colonel of his Regiment, who had been wounded with a Sword; was much surpriz'd when he was visit'd at his Lodgings by this Soldier, who was at that time as vigorous, as before he had receiv'd his Wounds; at which he now had only a Plaister. The Surgeon also testified to me his Amazement; and enquired, after what manner I had proceeded, to accomplish that Cure in so small a time.

This Cure is of it self sufficient to evince, that in Wounds of the Breast, there is no need of *Tents*; and moreover does demonstrate; that the Operation of the *Empyema*, is attended with much better Success, when performed on the hinder, than on the lateral Parts of the *Thorax*: For this Operation is done, with design to give a Passage, to the extravasated Blood; and to evacuate the Matter contain'd in the Cavity of the Breast; for which purposes this Place, is much more convenient than the others; the Humors being there-
by

by discharg'd so soon as bred, unless they be retain'd by *Tents*: The wounded are not troubled with violent Agitations; but enjoy a profound Quiet: The Parts have liberty to perform the necessary Motions; and *Nature* acts without constraint; finding always the ways open, by which she may deliver her self from what is contrary, and hurtful unto her; so that nothing is now to hinder her from closing up the Wound, when ever she shall find her self disposed so to do.

If then *Gunshot-Wounds* of this Nature, notwithstanding the Havock that the Bullet makes in the Places through which it passes, are so easily and speedily cured, by this Method; we have all the Reason in the World to believe, that the Wounds, made by *sharp Instruments*, where there is ordinarily only a simple Solution of Continuity, may be cured with much greater facility.

But we must observe, that in this Way of Dressing, great Care is to be had, of covering such Wounds with good substantial Pledgets of such bigness, that there may be no danger of their being push'd into the cavity of the Breast, by the weight of the incumbent Air: And upon the Pledgets we must apply a strong and agglutinative Plaster; such as that of *Andreas a Cruce*; which also must be sustain'd with a Compress of four doubles, and all kept on with the Napkin and Scapulary; all which

Precau-

Precaution is necessary to withstand the entry of the Air, which otherwise, the use of *Tents* being laid aside, might pass into the *Thorax*, and there produce fatal Accidents.

M. Verdue, Tom. 1. Chap. 14. advises not to use *Tents* in Wounds of the Breast, for too long a time; lest thereby incurable *Fistula's* be occasion'd.

C H A P. XIII.

Of the Breast.

OBSERVATION XII.

WHen I was at *Luferne*, there was brought to the Hospital, in the Year 1688. a Soldier of the Regiment of *Saluce*, who was wounded with a *Stillette*, (which is a Weapon made in form of a Poniard) on the side of the *Cartilago ensiformis*; the Wound, as was evidently to be seen, when it was dilated, passing upwards by the short Ribs, and piercing the *Midriff* in its fleshy part.

He was dress'd with a Pledget only, covered with an Incarnative that was pretty liquid. The necessary Diversions were perform'd, and such a Diet was ordered, as suited best with the greatness of the Wound, and the Strength and

and Constitution of the Patient. He was dress'd only once in two Days. The Suppuration was but very small; and in the space of eight or nine Days, he was compleatly cured.

REFLECTION.

If this Wound had been dress'd with *Tents*, after the ordinary Manner; I leave it to be Judg'd by every one, if such a desirable Success could have been expected; seeing the *Tent* would unquestionably have caus'd fearful Irritations of the *Diaphragma*, which without it is with great difficulty brought to reunite, because of its perpetual and necessary Motion. In fine, this Wound, how considerable soever it might appear, had certainly prov'd Mortal, if it had been stuff'd with an *Extraneous Body*; which by encreasing the division of the Midriff, would have prov'd an Impediment to its Action: For every Body knows, that Wounds in its nervous Part are deadly; and that these in the fleshy Part, may become so, when exasperated by ill Treatment, or neglected.

C H A P. XIV.

A Remark on One that was wounded in the Breast.

OBSERVATION XIII.

IN the last mention'd Year, and in the same Hospital ; one of the wounded died on the fifth or sixth Day of his Wound : And because it had not at all appear'd to be mortal, the Bullet having but glanc'd upon him, whereby the fifth Rib, was only broken, and the *Pleura* slightly hurt, I opened him, that I might discover the Cause of his Death. At first I was of Opinion, that an *Asthma*, with which he was afflicted when alive ; and which had almost quite disabled him for Service ; had conduced much to the shortning of his Days : But I was convinc'd of my mistake, when I perceiv'd all the Parts in the Breast in a very good Condition ; only the Heart had its Ventricles fill'd with *Polypuses* of the thickness of a large writing Quill, and about the length of the little Finger ; there being four in the *right*, and two in the *left Ventricle*.

If we may give credit to *Dr. Lower of Oxford*, in his Treatise on the *Motion of the Heart* ; we may easily enough account for the Death

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of

of this Man. He says, that in order to continue the *Circulation* of the Blood, and to send a convenient quantity thereof through the Vessels; the two *Ventricles* of the *Heart* must be of an equal *Capacity*, and moreover that they must have alike *Strength*, to undergo this Labour. Now this Equality not being to be found, in the *Heart* of him of whom we speak; its motion must needs have been deprav'd by the Disproportion of the weight of the *Polypuses*; and by the Inequality of the capacity of the *Ventricles*: or because the *Heart* being overcharg'd, could not contract it self without much difficulty; so that remitting much of its Motion, it became weak and languishing; and the *Midriff* also, to which it is always ty'd, did loose its necessary vigour; especially after his receiving the Wound; by Reason of which, the *Breast* could not be dilated, without trouble and Pain, because of the broken *Rib*, and of the Solution of continuity of the *Pleura*, *Intercostal Muscles*, and *Muscles of Respiration*: Wherefore the *Heart* and *Lungs* being depriv'd of their necessary Relief; Suffocation and Death were unavoidable.

Tho' this is a Subject forreign to our present Design; yet we Judg'd it would not be amiss, here to take notice of it, for Caution, and Advice to others in a like Occasion.

CHAP. XV.

Of the lower Belly and Loins.

OBSERVATION XIV.

IN the same Year 1688. a Soldier of the Regiment of *Montferrat*, called *Sans Soucy*, was wounded by a Bullet ; which entering before at the Region of the *Navel*, came out behind at that of the *Reins*, piercing the right *Ureter*, as it pass'd along. He was at first dress'd by one of the Master-Surgeons of *Turin*, who us'd to assist us ; which he perform'd after his own Way.

The Orifice which was in the Belly, notwithstanding the *Tents* which he us'd , was clos'd up, after the falling off of the Escar of the Teguments : but it fared otherwise with that in the Back ; for that Surgeon being careful to keep it open with a thick and long Tent, hinder'd also the Re-uniting of the *Ureter*, which occasion'd the *Urine* to come forth at the *Wound*. I having seen him one Day, advis'd the Surgeon speedily to take away the Tent, if he would avoid an incurable *Fistula* : but my Words were to no purpose ; for had he comply'd with 'em, he would have thought he had offended against the Rules of *Art*, and

ancient received *Maxims* ; with which my Advice was inconsistent.

Some Days after, seeing this Wound in a very bad Condition ; being covered with a whitish Flesh almost without Sense, and ready to become a *Callus* ; I was willing to prevent the fatal Consequences of that indiscreet Dressing : wherefore, with a dissolv'd Caustick, I consum'd all that appear'd callous about the lips of the Wound ; causing also some of it to pass into the Cavity thereof : and leaving out the *Tent*, I expected the Discharge, of what the Caustick had mortify'd : When the Flesh had regain'd its usual Colour, without loss of time, I syring'd into the Wound some Balsamick Water. I also us'd the Balsam of *Peru* alone for some Days ; and after that, the Styptic Plaister of *Crollius*, with little longish Compresses that were plac'd on the two Sides of the Wound, to press together the Brims. Thus the Wound began to be fill'd up ; and the Urine did by little and little resume it's former Course ; and in about 18 or 20 Days, the Wounded Person was perfectly cur'd.

REFLECTION.

In the Progress of this Cure, may evidently be perceived the difference, between the Method us'd by many Surgeons, fondly conceited

ceited of their own Opinions ; and that which I practise : for if in this Case, the first had been continued but for eight Days time, the Wound had become either extreamly difficult, or impossible to be cur'd. This is confirm'd by the Wound in the Belly ; the speedy Cure whereof, is to be attributed to the Motion of the *Intestines* ; which, contrary to the Design and Desire of the Surgeon, expell'd the Tent so soon as apply'd, in such sort that it was compleatly cur'd, a little after the falling of the *Eschar*.

Wherefore we can never too much blame those, who are so obstinately wedded to the Use of Tents, in Wounds of the lower Belly : they ought altogether to be laid aside, in spite of all the Objections that may be made on their behalf, for which undoubtedly there is no Real Ground. Experience gain'd by Practice, has so undeceiv'd me touching the Use of Tents, that I have left off the Use of them, not only in the lower Belly, but even in all other places of the Body, unless upon a very pressing Necessity : But in Wounds of the *Emulgent Vessels* of the *Reins*, of the *Ureters*, and of the *Bladder* ; as also in those of the *Joynts*, they occasion Accidents which oftentimes prove mortal : or otherwise leave behind them Infirmities, that ever after render Life miserable.

C H A P. XVI.

Of the Ventricle.

O B S E R V A T I O N XV.

ONE of the principal Deputies of the Hospital of *Briançon*, in the Spring of the Year 1695. receiv'd a Wound in the upper and middle part of the right *Hypochondrium* ; piercing in appearance to the *Ventricle*, or to the *Pylorus*. I could not find out the depth of the Wound with the Probe ; notwithstanding of all the Postures I could put the Patient in. But an Accident that immediately fell out discovered the truth of the matter : for tho' he had supp'd very slightly, he vomited up again all he had taken, mix'd with pure *Blood*. I immediately dilated moderately the Wound ; that a free Passage might be left to the Blood, that, possibly, was extravasated in the lower Belly, or to the Matter, that might afterwards breed there. I dress'd him with a Pledget only, upon which I apply'd a suitable Plaister and Bandage. I bled him a little after, and ordered a very exact Course of Diet : the Blood was thin, muddy, and corrupted ; whereby I perceiv'd the ill Habit and sickly Disposition of his

his Body. He spent the Night in Restlessness, because of Pains over all the lower Belly, and a violent Fever, which kept him from Sleep. In the Morning I repeated the bleeding: He had several Motions to vomit, but could not; and nothing at all came from the Wound, which was dress'd as before.

There being two Enemies to be grappled with, I propos'd to continue the *Diversions* without Interruption; which was also approved of by our Physicians. We used Potions, Ju-
leps and Ptisanes, such as were most proper for purifying the Mass of Blood, and blunting the Points of the *Acids*; to which I added some *Vulneraries*: Suppositories were us'd, to procure Stools, but to no purpose; which oblig'd us to give him from time to time half a pound of Decoction in a Clyster, but with small success. This Method we continu'd for seven Days, without being able to observe any considerable change, either as to the *Fever*, or the *Pain*; in which time he was let Blood six or seven times. In fine towards the seventh or eighth Day of the Wound, his Belly was opened, and at first he had a kind of a *bloody Flix*, but afterward, he voided *pure Blood*, tho' in no great quantity. I caus'd boil some vulnerary Plants with his Broth; and made him take for some Days fasting, a little spoonful of our *Samaritan Balsam*, call'd that of the *Scripture*. The Fever and Pains abated a

little, which gave me some hopes of recovery. The voiding of Blood by Stool continu'd till the fourteenth Day ; and then all the dangerous Symptoms disappear'd, and the Wound was compleatly cur'd, without having afforded any considerable store of Matter.

REFLECTION.

It was only the Situation of the Wound, together with the Accidents which followed, that made me conclude, that either the *Ventricle* or the *Pylorus* was wounded. Having therefore no certain sign, to direct my Judgment in this Affair ; I try'd if the Sword that had given the Wound, could make any discovery ; and found it was mark'd with Blood, the length of ten inches or thereabouts : There needed no more to assure me of the Nature of the Wound : But that which altogether convinc'd me, was the Blood voided by Stool, the seventh Day of the Wound : This having been collected in such a quantity, as was sufficient to press and push forward the Excrements contain'd in the Guts ; at length made way for it self : And if we had delay'd to bleed him, or done it more seldom, he would certainly have had a great and very dangerous Flux of *Blood*, besides a number of other Accidents that infallibly had followed.

It appears then, that the true Knowledge
of

of Wounds, which pierce into any Cavity of the Body, and hurt the inward Parts, depends upon the *Accidents*: and it is of high concern to a young Surgeon, not to confide too much in his Probe, or thereby to give his Opinion: he ought also to make all requisite *Diversions*; and to endeavour with all necessary Care, to avoid and prevent *Accidents*; which too often, when arriv'd to a certain height, become Proof against all our Endeavours.

A great many wounded Persons, have been sent to me, dress'd at first as if their *Wounds* had been but slight; which nevertheless I have found to be deep, and very considerable.

It is sometimes not possible, to put the Patient

in the same *Posture* he was in, when he received the Wound: So that it is an easie

matter to be deceiv'd, if we trust to such uncertain Tryals, as those made with the

Probe: The Parts may have chang'd their Situation, or they may be swell'd; or clotted

Blood gathered together in the Wound, may oppose the Probe's Passage; or, when it can't

trace the Way of the Instrument that made the Wound, it may slide along, between the

Interstices of the *Muscles*. Oftentimes the Wounded either know not in what Posture

they were, or are mistaken therein; or they are not in a Condition to give an Account.

Finally, it is much better to exceed in *Exact-*

ness, which can't prejudice the Patient ; than to take up with an *Uncertainty*, which may cost the wounded his *Life*, and the Surgeon his *Reputation*.

Moreover, it appears by the Success of this *Cure*, that the *Orifices* of penetrating Wounds, afford but very small Assistance, to the Cure of the inward wounded Parts: For it is next to impossible, to convey, through them, Remedies to those Parts, that want 'em, and for which they are design'd : This I am bold to affirm, contrary to the sentiments of the Ancients, and of *Fabricius ab Aquapendente*, and some Moderns. It is also scarcely to be expected, that the Blood which flows from these Parts, should come forth by the *external Orifice*; as we have observ'd: Unless the lower Belly be quite fill'd up with Blood. And in fine, the keeping open of the Wounds, is more pernicious than profitable; serving only to introduce the *Air* into Places, where it almost never fails to occasion Irritations, disquieting Pains, Coagulations, Obstructions or Corruptions, and oftentimes all these Evils together.

Galen affirms, that Wounds in the Bottom of the Ventricle, if not great, are curable: But *Celsus* is of Opinion that they are mortal: Now, how to reconcile such opposite Sentiments, I know not. However that they are not absolutely Mortal, this Cure is a sufficient

ent Proof: But it is nevertheless true, that they are very dangerous, and their Cure uncertain; being attended with many Accidents, the least of which may prove fatal: Such as *Vomiting*, a Disorder peculiar to this Part; or a Flux of Blood from the branches of the *Arteria cæliaca*, the *Vena Gastrica* and *Gastroepiploica*; whether scarce any *Astringents* can reach, and where they can't be kept on: also *Convulsions* may be occasion'd by the wounding of the *Nerves* that proceed from the *Recurrents*: Add to these, that by Wounds of this part, the *Chyle* may be evacuated, so soon as made.

C A A P. XVII.

Of the Perinæum.

OBSERVATION XVI.

DURING the Campagne of the foremention'd Year 1688, a Soldier in the Regiment of the *Duke of Savoy*, and Company of *St. George* call'd *La Couleur*, was sent to me, having an *Abscess* which cover'd all the *Perinaum* and part of the *Scrotum*.

After I had opened it on the left side, at that Place where ordinarily the Operation for extracting the Stone is perform'd; there came forth

forth a great deal of *corrupt Matter*, with much *Urine*, whereby I understood that by the long stay of the Matter, the Membranes of the *Bladder* were vitiated and corroded.

I used neither *Tent* nor *Dilater* to the Sore, but judg'd it sufficient, to drop into it a Medicine for *cleansing* the Ulcer. The Suppuration lasted for the space of fifteen Days; which yet hindred me not, from the very first to use little long and slender Bolsters, for bringing together the divided Parts, which I kept fast with a strong Bandage, fitted to the Figure of the Part.

After this, perceiving the Matter came away in a moderate quantity, and of a laudable consistence, tho' mix'd with some Urine; I used more powerful Incarnatives, Balsamick Water, and the *Balsam of Peru*, and upon these *Crollius's* Plaister: I straitned the Bandage, obliging the Patient to keep his Thighs close together: Thus by degrees the Urine resum'd its former Course, and in five or six Weeks time the Cure was finish'd.

REFLECTION.

This Cure is inconsistent with the Opinion of *Galen*, who Aphor. 18. says, that divisions of the Blader, cannot be united, because it is a Part without Blood.

I have had many under my Hands, that were wounded in the Bladder, which were all happily cur'd by the same Method: And indeed if loss of Substance occasion'd by the corrupting Matter of an *Abcess*, has been sufficiently made up; it is easie to believe that simple Divisions thereof by external Incisions, may with much more Ease and Expedition be united. This is sufficiently demonstrated, by the great number of those which have recovered after *Cutting* for the *Stone*: And if sometimes *Fistula's* were left after this Operation; they have been occasion'd, by keeping *Tents* in the Wound without any necessity: I know *M. Verdue* imputes this to the sharpness of the Urine; but that I can't be perswaded of; having observ'd in many Places of my Travels, that the country People have us'd nothing else, but their *Urine*, to cure their Wounds.

But if we reflect a little on the Effects produc'd by *Tents*, which many People use in the Divisions of this Part; we may soon be convinc'd, that they are the Cause of this *Accident*, by keeping open a way for the passage of the Urine: which tho' it cannot run in a full Stream, so long as it is hindred by the *Tent*; yet this being penetrated by the Urine, dulls the Sense of the place, and turns the Flesh Callous.

When a Wound abounds in Moisture, be the Humor what it will, it is of difficult Cure:
this

this is sufficiently confirm'd by the *Fistula's* which happen in the *Breast* or *Joynts*, tho the *Urine* have no hand in the *Matter*. Moreover, to convince us that the *Humours*, where-with *Wounds* and *Ulcers* are watered, are an hindrance to their *Joining* and filling up ; we need only to consider, these *Openings* in the *Thighs* and *Legs* of *Hydropick Persons*, that are made by *Nature*, or that we are necessitated to make by *Art*. Every body knows that the *Cure* of these, is extremely difficult to be effected, because of the *Humidity* wherewith they are continually soaked ; which is sufficient to support what we have advanc'd on this Subject ; and to perswade such as are of a contrary Opinion.

Moreover, the *Breaking*, or *Fretting* of the *Lymphatick Vessels*, which occasions the perpetual running of watery *Humours* in *Sores*, hinders their *Reunion* ; in regard that this *Serosity* dilutes and carries away the *Nutricious Juice*, and brings them to a *Fistula*. Great *Suppurations* also have the same mischievous Effects ; but these being not so obstinate, are more easily conquer'd, than a *Running* of the *Lympha*.

Finally, if we would effect a speedy *Cure* in *Wounds* of the *Bladder*, we must carefully shun whatsoever may widen them, or hinder their *Re-union* ; we must apply some powerful *Incarnative*, such as the *Balsam of Peru* ; a
substantial

substantial Agglutinative *Plaster*, as that of *Crollius*, with small longish *Compresses*, and a sufficient *Bandage*, as hath been said: but above all, we must take Care that the Patient be altogether at Rest, without any *Disturbance*. These are the Means, which I have found most effectual, and most successful, in bringing such kind of *Ulcers* to a perfect Cure.

C H A P. XVIII.

Of the Fundament.

OBSERVATION XVII.

M*onsiue de Monrodon*, Captain of a Battalion of the King's Regiment, commanded by *M. Desbordes*, having been four Years ago cured of an *Abscess* in the *Anus*, there remained still some *Fistulous Sinuses*, from which there was always discharg'd a great deal of Matter: This Inconvenience oblig'd him, in the Year 1695, to demand my Advice. Having observ'd several *Callosities* about the *Anus* with deep and winding *Cavities*, I propos'd to him, to lay open the *Fistula*, in order to consume these *Hardnesses*, and cleanse the *Bottom* thereof, without which there was no Hope of a perfect Cure. But he calling to
Mind

Mind the Torments, he had endur'd in the first Cure, put it off for some time; till falling into an Indisposition occasion'd by his ill habit of Body, the *Fistula* open'd of it self, about a Month after I had seen him, with an extraordinary Running, and great abundance of Matter, accompanied with a quick and insupportable *Pain*.

I was at that time, in a Place at some distance from our Hospital; wherefore he caus'd himself to be dress'd by a *Mate* of the Regiment, who having nothing but the *common Remedies*, and understanding only the *ordinary Method*, fill'd up that large *Cavity* with a great quantity of *Lint*, arm'd with suppurative and putrifying Medicines, which made a terrible *Corruption*, and great *Havock* in the Part; encreasing the *Suppuration*, and the *Pain*. He then sent me an Account, of the deplorable Condition to which he was reduc'd; praying me to come and see him. When I came I advis'd him to cause himself to be remov'd unto a Place, where I might take care of him my self; which also was done that same Day. The *Matter* that was retain'd, and the continual *Exasperation* of the Parts, had made a Hole, big enough to admit ones *Fist*, which pass'd with a winding course even to the *Os sacrum*; there was also another *Sinus* that reach'd to the neck of the *Bladder*: so that the sick Person could no ways go to Stool, or enjoy one Minute of Repose.

Ha-

Having taken him under my Care, I dress'd him only with the *Red Balsam* melted with an equal quantity of the *Samaritan Balsam*; which I pour'd warm, into the *Sinuses*; and after having fill'd them therewith, I cover'd the Orifice with a large Pledget dipt in the same, over which I put a Plaister, and upon this a Compress; making all fast with a convenient Bandage. I caus'd him use some absorbing Medicines to dull the Points of the *Acids*, and *Ptisanes* to putrify the *Blood*, and also some gentle *Purgatives*. This Method succeeded so well, that the Matter which was thin, putrid, and corrosive, became laudable; the *Flesh* which was loose and wasted, by degrees recover'd its firmness; the Patient went to Stool every Day without any Pain; at Night also he enjoy'd the Repose which was so necessary for him: and finally, in one Month's time he was compleatly cur'd; the Sores being brought to a firm and laudable *Scar*, to the amazement not only of the Patient himself, but of all those also who knew, to what a deplorable Condition he was formerly reduc'd; being without all Hope of being cur'd.

REFLECTION.

These kinds of Distempers, are extreemly troublesome, that affect parts, on which, by Reason of their necessary Use, it is very difficult to

to keep the *Dressings* : such a Part is the *Anus*, that is often afflicted with great *Suppurations*, and dismal *Putrefactions*, which delay and protract a Cure to a formidable length. The Person we have been just now speaking of, is a clear demonstration of this. In the first Cure, *six Months* time were spent ; he endur'd much Pain and Tronble, and after all it was not brought to *Perfection* : From whence I infer, that it is evident, that the *Gentleness* and *Easiness* of our Method, was the genuine Cause, of the perfect and speedy Cure that ensued : For that *Organ* which serves for the *Common-shore* of the Body, being left at Liberty, and not straitned by an *Extraneous Body* ; the *Excrements* were neither press'd nor retain'd, but were discharg'd with *Ease*, and without *Pain* : whereas on the contrary, when Wounds in this Part, are cram'd up with Lint, it is impossible that *Evacuations* can be made by the *Anus*, but the *Excrements* must press and squeeze the crouded Lint against the Sides of the Sore ; which must needs occasion insufferable *Pains*, and oftentimes also a *Flux of Blood* : And indeed *Monsieur de Monrodon* affirm'd to me, that he never went to Stool all the time of his first Cure ; but he was still troubled with these two Symptoms.

Finally we may see, that when *Putrifying* and *Suppurating Medicines* are laid aside ; the Parts are by the means of unctuous *Balsamicks*, gradually

gradually restor'd to their former Tempera-
ture ; and that when the Points of the *Acids*
are broken, and the *Mass* of *Blood* purifyed by
proper Remedies, the *natural Balsam* of the
Parts, doth cleanse, fill up with Flesh, and
cicatrizate, when ever the Occasion requires.

C H A P. XIX.

Of the upper Part of the Shoulder.

OBSERVATION XVIII.

IN the Year 1678. as I travelled from *Turin*
towards *Rome* and *Venice*, there was brought
to me, the Son of an Inhabitant of a certain
place called *La Rose*, having an Abscess that
covered all the *Acromion*, and the upper part
of the Shoulder-bone of the right Side, with
a great Defluxion of Humour upon the Joynt.
I shewd his Father the urgent necessity there
was of opening it, and the Accidents that
otherwise might ensue : but the fond Love he
had for his Son, made him withstand the Pro-
posal. Some time after this it opened of its
self ; and the thinnest part of the Matter,
made its way through several Holes , into
which so many *Tents* were put by a Surgeon of
the Place, who dress'd him, at his Father's
Desire. This Method was followed for two
or

or three *Months* without any Prospect of a *Cure*.

At my Return, he was committed to my *Care*, in a very bad Condition : he was altogether depriv'd of the *Motion* of his Arm ; several *Cavities* were form'd about the Joynt ; there was a perpetual *Flux* of *Matter* ; and the *Ligament*. were relax'd ; which made me fear the falling out of the Head of the *Humerus*. I was perswaded that the Distemper was past Cure ; considering the Weakness of the Patient, and of the part affected, and the ill Disposition of his Body ; which yet was but a Symptom of the Disease, occasioned by the great *Irritations*, and continual *Discharge* of *Humours*, as I knew by the Sequel. I made however a pretty large Opening in that which I judg'd the most depending part, and straight-way took away the *Tents*, tho' at that time I was not altogether convinc'd of their pernicious Effects.

From that time forth the Flux of Matter begun to diminish, which made me endeavour, with all possible speed, thorowly to cleanse the bottom of the Ulcer, and the *Sinuses*, with a Lotion of *Birchwort*, *Myrrh*, *Sugar-candy*, and *Vitriol*, in *White-wine* ; which had very good Success : I did my best, also, to strengthen the Joynt. Finally the *Cavities* were fill'd up by degrees ; the higher *Orifices* were first clos'd up, and the others afterwards.

terwards. He was cur'd in two Months time; but his Arm was something more than other two, before it recover'd its Strength.

REFLECTION.

This sudden good Success, falling out so unexpectedly, and at a time when I had casually, tho' very seasonably, laid aside the use of *Tents*, began to open my Eyes and to make me entertain an ill Opinion of them: For I could blame nothing on this occasion, save the *Tents*, which had been so long kept in the Sore, for having caus'd all these Accidents, by the Irritation and compression of the Parts: And moreover by hindring the *Discharge* of the *Matter*, from one dressing to another; whereby it had time to gather, and to ferment, to encrease the Cavities, and Waste of the Substance, to moisten the Tendons, slacken the Ligaments, and to weaken and intirely ruin the *Part*. Finally, the most part of the Symptoms, ceasing with the leaving out of the *Tents*; does sufficiently evince, that they proceeded from them: and had the first *Method* been continu'd in for a Month or two, a compleat dislocation of the Head of the Shoulder-bone, the corruption of the Ligaments, and incurable *Fistula's*, had certainly ensu'd; and the Patient would have thereby been made lame during his Life.

C H A P. XX.

Of the Shoulder.

OBSERVATION XIX.

IN the Year 1692. a Soldier of the Regiment of *Sourche*, whose name I have forgotten, was brought to the Hospital at *Briançon*. He was wounded with a Bullet, which entered at the foremost and middle part of the *Acromion*, and came out on the upper part of the Shoulder-blade; breaking the *Acromion*, with a part of the *Scapula*, as it went along.

The Orifices were straitway dilated, and dress'd only with Pledgets and the Digestive: *Diversions* were speedily made, and his *Diet* ordered. In the first Dressings, several pieces of Bone, that cou'd not be reunited, having been almost wholly separated, came away; several others that were yet ty'd by a small piece of the *Periosteum*, tho' in appearance shaking and ready to fall off, were yet joyned again.

Finally, all the adhering Splinters being again united, the Wound began to fill up; and in two Months time, or thereabout, was brought to a firm and laudable *Cicatrix*; to the great Surprise of all who had been present
at

at the Dressings: no Accident having happen'd all the time of the Cure.

REFLECTION.

It will certainly be thought strange, that I permitted the Orifices to be clos'd up, without expecting the Discharge of the Bones: And it will possibly be said that I dress'd not according to Art.

But to me it appears much more reasonable and advantageous, to have preserv'd them, than occasion'd their Loss; seeing a Callus has never the becoming Convenience of a Natural Part: And the Excellency of Art consists, in curing speedily, if possible, and without Pain; and in preserving the Figure, Substance and Disposition of the wounded Parts. 'Tis certain, that *Health* being the End of the Surgeon's Art, the principal Design is attain'd, when the Cure is perform'd.

If that Intention which ought to be the Scope of the Artist, can, by this Method, be *Gently, Easily* and *Speedily* accomplish'd; there is no Controversie but that it ought to be preferr'd to all others that are contrary to it.

C H A P. XXI.

Of the Arm.

OBSERVATION XX.

THE following Year, a Granadeer of the Regiment of *Navarre*, call'd *Belle Humeur*, was brought to the same Hospital, wounded with a Shot on the upper Part of the left Shoulder-bone, about an Inch, or two Fingers breadth below the Joynt: The Bullet entred on the fore Part, and went out behind, making a terrible havock. Three or four Days pass'd, wherein he was not dress'd, but only slightly at first, and without making any Diversion. The whole Arm was distended like a Foot-ball, the Orifices were choak'd up, inflam'd, and dispos'd to Gangrene.

I made Incisions in the Orifices, to give breath unto the Wound, and Scarifications over all the Arm; and having dress'd with a Digestive only, without *Tents* or *Dilaters*, I let a good quantity of Blood run from the Part, by the Incisions, to empty it somewhat; and afterward fomented it with Spirit of Wine and a little Sal-armoniack: I apply'd over all the Arm *Diapalma* dissolv'd in Oyl of Roses and Vine-

Vinegar, which in a little time abated the Inflammation of the Part, and lessened the Swelling.

Diversions were not omitted; but in spite of all could be done, three Abscesses were form'd; one at the bending of the Elbow inwardly, another on the outward and middle part of the Arm, and the third on the hinder and almost lowest part of the *Humerus*: They were all three opened, and by their plentiful Suppuration, the whole afflicted Member was eased. After three or four Splinters of the Bone, that stuck by their upper part only to the *Periostium*, were again Joyn'd, I bent all my Endeavours to bring together, and unite the Lips of the Wound: And when the Escar was intirely fallen, and the Symptoms vanish'd, I us'd only a simple Incarnative, dressing but once in two Days: The Suppuration was but small, and the Orifices begun apparently to fill up, and in thirty Days were quite skin'd over: So that from thenceforth I us'd the rolling Bandage and Plaisters, in order to fortify the *Callus*; And now his Diet is increas'd, and he is able to rise from his Bed. Finally he departed to return to his Regiment, forty four Days after he had receiv'd the Wound.

REFLECTION.

The delaying of the *Diversions*, as evidently appears, was one of the chief Causes of the Accidents that followed upon this Wound ; and 'tis plain that if *Tents*, *Dilaters*, or other exasperating things had been us'd in dressing, they had infallibly prov'd an Impediment to the *Discharging* of the Part, and ripening of the *Abscesses*, for Reasons adduc'd in the first Part, when we discours'd of their fatal Effects.

Nature is, in such Cases, sufficiently perplex'd, without the additional Oppression of the most grievous of all her Enemies : She is, as it were, fetter'd, and can't act : And when by a healthful and critical Motion, she endeavours to deliver her self, as in the *Abscesses* of the former Cure ; she is unable to produce any desirable Effect, so long as the Wound is cram'd full of *Lint* : and the most frequent Consequence of this, is a Stifling of the *Natural Heat*, after which follows a *Gangrene*.

There have but few Accidents followed upon Wounds, treated after our Method ; and I am bold to affirm, that scarce any have miscarried under our Care, tho' more dangerously wounded than this *Soldier* of whom we have been speaking ; all which is owing to the Gentleness of this *Way*, and the Use of *Diversions*.

CHAP.

C H A P. XXII.

Of another Wound in the Arm.

OBSERVATION XXI.

IN the Year 1690. a little time after the War was declar'd in *Savoy*; a Soldier of the Regiment of *Pondenx*, nam'd *La Montague*, was sent to the Hospital at *Briançon*, who had got a violent Blow with the Handle of an Halberd, on the middle and outward Part of the left *Humerus*, whereby the Bone was broken to pieces, with a Wound, and great Contusion.

Several portions of the Bone stuck out at the Wound, which did still adhere to the *Periosteum*. I plac'd them one by another, as gently and nimbly as possibly I could; endeavouring to give them their natural Position. I rub'd the Part with a powerfully dissolving Balsam very warm, which I had caus'd to be prepar'd for Contusions. I joyn'd the Lips of the Wound, and apply'd an Incarnative. I gently roll'd the part with a Band about three Fingers breadth above the Wound, and with another as much below it; applying a Plaister made of *Diapalma* dissolv'd in Oyl of Roses, and Vinegar, between the Bands, the middle part whereof being opposite to the Wound,

the Ends met upon it, and covered it : Upon this I put a Compress, of the same figure and bigness, folded into three or four doubles, and dipt in warm Wine : And then a piece of *Past-board*, which resting with its ends upon the two Roulers, and embracing and keeping fast all the Wound-apparel ; came together, and was tied on the hinder part of the Arm.

In this *Past-board* there was a Hole cut out, where it covered the Wound, to which a piece of the same was fitted, to be taken off at each dressing, and afterward put on : This was made fast with a little Band, which I roll'd about all the *Past-board* after I had apply'd my Dressings, in such fashion, that without disturbing either the Arm, or the *Past-board*, I had nothing to do, but when there was Occasion to unty the Band, take off the piece, and lift up the two ends of the Compress and of the Plaister ; and so to embrocate the Wound and then to dress it with a *Pledget* only, and do it up again.

In this manner, it was dress'd once a Day for five or six Days : after which I gently took off all the Dressings, save the Rollers ; and changing the Plaister and Compress, I dress'd but once in two Days. No Accident happen'd for the Contusion was quickly dissolv'd, no Bones were discharg'd, and the Suppuration was but little ; *Diversions* having been made from the very first. The Wound was fill'd up

and compleatly skin'd, about the twenty second Day of the Wound : wherefore I thenceforth dress'd it only with Rollers, the Plaster *pro Fracturis*, and the necessary Splents. Since that time I have not seen him, because then we parted from *Luferne* ; but 'tis certain he was past all Danger.

REFLECTION.

If this Way of Dressing, be compar'd with that of many Surgeons, who not only fill up the Sores with Lint, but also at each Dressing move to and fro the broken Pieces of Bone, in order to promote their Separation, it may be seen how different the Success will prove. Had I treated this Wound in a rigorous manner, such Accidents had undoubtedly happen'd as would have baffled my Care. The Suppuration would have been great ; and thus the Pieces of the Bone, thereby quite separated, and carried into some Cavity, had caus'd many *Abscesses* and *Sinuses* : which Disorders, oftentimes cause a necessity of Amputation ; and when the Strength is decay'd, they bring on Death. After this I made use of a Piece of white Iron, form'd in the same Fashion as the Past-board, with a Window opening upon the Wound, which being lift up, I dress'd it without moving the Body of the Machine. But seeing in those Places where Hospitals are,

we have not every thing requisite at hand, the Surgeon must supply that Defect by his own Ingenuity.

C H A P. XXIII.

Of the Fore-Arm, or Cubit.

O B S E R V A T I O N XXII.

IN the same place, a Soldier in the foresaid Regiment, receiv'd a Shot in the *Fore-Arm*, on the middle and hinder part; which broke the *Radius*, and carried away a Part of the *Cubitus*.

He was dress'd after our *Method*; but the Cavity of the Wound was filled with a Pledget of very fine Lint, dipt in a Mixture of our *Balsam*, and a little *Linimentum Arcaei*, which easeth Pain, promotes the fall of the Escar, and resists Fluxion of Humours. Diversions were made, and his Diet ordered.

We dress'd him after two Days, and found two or three pices of Bone sticking to the Lint. In the second Dressing, I set the *Radius*, keeping it firm with little Compresses stiffned with Past-board: One of these I put on the fore-part of the Arm upon the broken Bone, another on the inward, and a third on the outward part; making them all fast, with two Rollers, one above, and the other below
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the Fracture : this *Apparatus* kept the Arm streight, and serv'd instead of a Defensive. Over all we apply'd the Past-board, and supported the Arm with a Sling. The Suppuration was very moderate, and another piece of Bone came afterwards away : We dress'd but once in two Days ; and on the twelfth or fifteenth of the Wound, the Flesh begun to cover the Bone ; for which Cause, we dress'd him only once in three Days, and that very gently and speedily. Towards the twentieth Day, the Wound began to be fill'd up. The defect of the *Cubitus* was made up with a *Callus*, and the *Radius* recover'd without Exfoliation ; and all in four Weeks time : after which I only us'd a Roller on the fractur'd place. About this time we parted from *Luferne*, and I have not seen him since.

REFLECTION.

The good Success, the Expedition, and the Gentleness of these *Cures*, ought, in my Opinion, to give some Reputation to this way of Dressing. I have not seen, since first I entred upon Practice, any Method followed that has been either so short, so easie for the Patient, or so certain in the Consequence. Hereby these Pains are prevented, which ordinarily bring *Fevers*, that are attended with many other *Accidents* : *Abscesses*, *Fluxions*,
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and *Inflammations* are avoided: the *Matter* is but little, and that laudable: the Wounded can take solid *Nourishment*, and necessary *Rest*; whereby all the *Faculties* become more vigorous, and *Nature* more active, *Flesh* is more easily generated, and a *Callus* more speedily formed: and in fine, every thing with more facility re-establish'd, and reduc'd to its former State.

C H A P. XXIV.

Of another Wound in the Fore-Arm.

OBSERVATION XXIII.

ABOUT the End of the Year 1695. I being in the same Post in the Hospital of the Abby of *Oulx*, wherein I was in that of *Briançon*, there was brought to us one call'd *Beaulieu*, belonging to the King's Battalion commanded by *M. Des-bordes*, and of the Company of *M. du Mont*. He was run with a Sword into the middle and inward Part of the left Arm, whereby the Artery between the *Radius* and *Cubitus* was opened.

He had remain'd eight or nine Days in his Quarters, being dress'd by one of the Mates; who, without making any *Diversion*, only shut up the Wound with a strong Stopple, which restrain'd

restrain'd the great Flux of Blood between Dressings : But at the time of Dressing he bled excessively. The Blood which was extravasated in the Member, did there corrupt, and caus'd Abscesses in several Places. But at last, his Surgeon, seeing that his Strength was daily diminished, and fearing some fatal Accident, caus'd him to be sent to *Oulx*.

His Weakness was advantageous to him : for whereas *Amputation* was chiefly indicated, his loss of Strength was a contrary Indication that prevail'd over the former. I dilated the Wound that I might discover the Artery, and empty the Part, of that Matter and clotted Blood, wherewith it was fill'd. But being then unfurnish'd with such things as were necessary for my Design, I apply'd a Button of *Vitriol* to the Opening of the Artery; and having fill'd the Wound with Lint, and apply'd the other Dressings necessary on such Occasions, I let him Blood twice, but in small quantities; and gave him certain Emulsions, wherein were mix'd some Anodyne Medicines, to retard the Motion of the *Blood*. I let two Days pass without Dressing; but on the third, I found all I had done, was to no purpose. At the Place where the *Artery* was opened, there was a considerable and painful *Swelling*; the *Lint* that fill'd the Wound, was heav'd up with the Pulsation, and a Bloody Water came out, which presag'd the sudden return of the

Bleeding. I caus'd prepare my Troches of *Rose-water*, *Gum-Dracant* and *Vitriol*, with some good *Styptick Water*, and two Days after I took out all that which fill'd the Wound: I also took away the Escar made by the *Vitriol*, and the Fungus that was grown in the Wound; which I further dilated to give vent to the Blood, that had diffus'd it self through the Flesh, beyond the extent of the Wound. All this time I repress'd the Bleeding by the *Turnkey*, which I caus'd to be slackned, to discover again the Opening of the Artery, to which I apply'd two little Troches, supported by a small Compress, dipt in the *Styptick Water*: I fill'd the Cavity of the Wound with Dossels pretty hard; and moisten'd in the same Liquor; then I took a large Compress of three Fingers breadth; thick, and a Foot in length, cover'd only with Bole dissolv'd in Vinegar; this I apply'd along the Artery, even to the *Arm-pit*; and lastly an astringent Plaister, which I made fast with Compresses, and strong Bandage. I caus'd the Arm to be laid on a *Pillow*, with the Hand higher than the Elbow. Two Days after, I unty'd the Rollers, and took off the Compresses and the Plaister; and seeing things in a good Condition, I apply'd new *Astringents*, without touching the Wound. This Method I continu'd two or three Days: afterward I begun to remove the Dossels that were outmost, sustaining always the others with

with new ones, hindering also those which were next to the Artery to fall off untill the Suppuration were begun, that time might be given to the *Flesh*, to cover the *Artery*; the Bleeding being very well stop'd. In effect about ten or eleven Days after the Application of these Dressings, all came off of its own Accord, not one drop of Blood following; for the *Artery* was pretty well cover'd. All this was done in presence of *M. Davejan*, one of the Physicians of the Hospital, a Man of Integrity, Merit, and great Skill. Finally the *Wound* was in a little time compleatly cured.

REFLECTION.

These kinds of Wounds, where *Arteries* are opened, are of all others the most ticklish; they give a great deal of *Trouble*; and but little *Reputation* is gain'd by their Cure. Every one knows, that there was no place for the Operation of the *Aneurisma*, where this Artery was opened; and that it was necessary either to cut off the Member, or to let the wounded Person perish, or to stop the Bleeding by such means as I us'd. By this we may see, that it is not good to be too hasty in cutting off a Member, where Arteries are opened that admit not the *Aneurisma*; that we ought not to dispond, tho' our first Attempts to stop the Flux of Blood, prove unsuccessful; and that
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the *Troches* which I use, are upon many accounts better than *Vitriol*. This is not the only time, that I have experienc'd the Success of this Method, in a like Occasion: I made some Tryals of the same at *Luferne* in the Year 1686. and in particular, upon a certain Soldier, who had the *Artery* that is between the *Tibia* and *Fibula* opened: After much trouble, before I would condescend to the cutting off of the Member, I was willing to try this Method, which had also a very happy Success. That we may preserve a *Member*, we are to leave nothing undone; neither ought we to consent to its *Amputation*, untill first all other Means have been in vain assay'd.

C H A P. XXV.

Of the Hands.

OBSERVATION XXIV.

SINCE the beginning of the War, I have had under Cure very many, whose *Hands* were pierc'd, torn, or half carried away by such Fire-Arms as burst asunder, which is a thing very ordinary in Armies. Many others also have I dress'd, that had their *Hands* shot through with Bullets, and cut with sharp Instruments, of which I shall not speak in particular.

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But I may say, that all those I have dress'd, in these latter times, tho' by the Wounds, the part has been very much shatter'd and torn, have been always cur'd, without losing what remain'd of the Member, and with little or no discharge of Splinters of the Bones, or loss of Fingers, or their Joynts.

In this kind of Wounds, as well as in others, I have avoided *frequent Dressing*, and the Use of *putresying Medicines*: and I own that I have ever found the *Spirit of Wine*, a very successful Remedy in Wounds of the *Extremities*, and in those of *Nervous Parts*. I have us'd it chiefly in Hospitals, where it brought always a speedy Relief.

Many of the Ancients, have ordered to keep open for some considerable time, the Wounds of the *Nerves* and *Tendons*; to give vent to such Matter, as by its Stay, might corrupt the Substance of the Parts.

But Experience has taught me, that 'tis much more beneficial to the wounded in such Cases, to hinder, than to promote the Suppuration; by doing betimes what is necessary to prevent Fluxions upon the Part: sometimes applying good Defensives to the superior Parts, to repress the activity of the Blood; and some times using resolving Anodines to the Place afflicted, if there is need, to prevent or take off the *Pain*, from which most comonly the Accidents proceed that attend such Wounds

Wounds ; and to stave off at the same time the Attempts of the *Air*, which is the greatest Enemy of the nervous Parts.

I can aver, that by using this Method, I have cur'd such Wounds much more suddenly, than I could any other Way. I believe also, seeing all are agreed that the *Air* is pernicious to Wounds in general, that none will question but these of the *Nerves*, receive thereby a more notable prejudice, than those of any other Parts of the Body ; considering their Tenderness, the Nature of their Substance, and their Temperament. I leave it then to Consideration, whether Wounds of this kind, could be defended from the Injuries of the *Air*, if they were kept open, according to the Opinion of the *Ancients*.

But it will be said, that 'tis extremely difficult, after all possible Precaution, to avoid the use of *putrifying* and *irritating* Medicines, and of Dilaters, in Cures that are tedious : For if such things as breed Flesh, and are balsamick be us'd, when the Wound at the same time must be kept open, there will be a necessity of consuming incessantly the Flesh with Cathereticks ; which are very apt by the Pain they cause, to produce Accidents, especially in parts so sensible as these.

Now to this I say, that if Suppurating and Putrifying Medicines are us'd, there almost ever infallibly follows a great Suppuration ; and
sometimes

sometimes a total Dissolution of the nervous and tendinous Parts: Especially if *Tents* or *Dilaters* be also imploy'd; which, if but for a small time they touch such Parts, do oftentimes draw on Incurable, and sometimes Mortal Symptoms.

Wherefore, I have ever judg'd it best, to close up the Wound so soon as possible, on such Occasions; chiefly when there is no extraneous Body, which of necessity must be drawn forth; or if all requisite Diligence, has been already at first Dressing us'd to that intent. In fine, tho' I have ever, not only avoided with all possible Care, the using of putrifying Things; but also have indeavoured to dress as *Seldom* as might be; I dare affirm, that in this way of practice, there never happened even the least Accident, to all that great number of wounded Persons, dress'd according to it, in our Hospital at *Briançon*.

Pareus, Book 10. Ch. 9. shews, that by this Method he successfully cur'd the Pricking of a *Tendon*, which King *Charles* the ninth, had received in Blood-letting: Tho' in another Place, he exceedingly finds fault with those, who use the *Stitch* to wounded Tendons: He would undoubtedly have been of another Mind, had he liv'd, and seen, as I and many others have done, how often the deceas'd *M. Bien-aïse*, an expert Surgeon, has perform'd the same with Success in his House at *Paris*. But after
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all, we may maintain, that he is not the first, who has practis'd the *Stitching* of a *Tendon* : For in former times it was ordinary, and many of the *Ancients* have done it.

C H A P. XXVI.

Of the Thigh.

OBSERVATION XXV.

IN the Year 1686. when the *Vaudois* were driven from the Vallies of *Luserne*; one *Le Grand*, a French-man by Birth, Sergeant in the Regiment of Guards, and at present an Officer in a Regiment of Fusileers belonging to *His Royal Highness*, being wounded by a Bullet in the upper and outward part of the right Thigh, and the Ball not to be found, was brought to the Hospital at *Luserne*.

He had lain a Day and a Night helpless upon the Ground; which occasion'd a considerable *Fluxion*, and an *Inflammation* of the Part. I made large Incisions, and spar'd no Pains to find the Bullet, but all in vain.

He was forthwith let Blood, and had a Clyster given him; an exact Course of Diet being ordered. The Bleedings were repeated, with the other Remedies for withdrawing the Humors from the Part. The Swelling and

and Inflammation were lessened ; and I began to think, that things were in a pretty good Condition : I kept in the Wound only a little *Tent*, about the length of two Fingers Breadth, very soft, and of pretty fine Lint.

Thus the first Accidents were vanquish'd ; but, others more troublesome and more obstinate yet remain'd : for the Suppuration and **Flux** of Humours was so prodigiously great, that I verily believ'd, his whole Body would thereby have been dissolv'd. At every time we opened the Wound to dress it, which was twice a Day, more than a *Pint* of *Matter* came away, besides what was discharg'd between Dressings, which might be judg'd as much : In the mean time the Strength of the Wounded Person was more and more impaired, and his Body insensibly wasted away.

I could ascribe all these Accidents, to nothing else but the Bullet, which remain'd in the Member : and this I the rather inclin'd to think, in regard that almost all the Bullets, that were drawn from Wounds during this Campaign, were full of *Sublimat*, or *Glass* ; and many others of other *Metals*, and *Tin*.

I advis'd with *M. Conte*, then at *Luferne*, Surgeon in Ordinary to his Royal Highness ; who being acquainted with the Order of Cure, and the Symptoms, was of Opinion, that by Purging the Moisture might be dry'd up ; this was accordingly put in practice.

I was so eagerly desirous to effect this Cure, as if all my Reputation had depended upon the Success : and indeed it appear'd, as if *Providence* had thereby design'd to open my *Eyes*, and to make use of me for the Relief of many others being qualified for that end, by the Experience I therein attain'd.

The Wounded Part was greatly disordered by the *Purging*, yea in such sort that I fear'd a *Gangreen* : the *Fever* was encreas'd, and the Patient had quitted all his Hopes, notwithstanding the Assurance he had conceived, of being cur'd under my Hands.

As for my self, I began to despair; although it is my Humour never to give over my Wounded Patient, so long as Life continues : For his Thigh was all over *livid*, and the spaces between the Muscles, yea all the Member, was fill'd and soak'd with Matter, which every Day increas'd, the Wound being as it were an inexhaustible Fountain. I considered with my self a thousand times, if there was any thing more I could do, or any thing further to be us'd. I had perform'd all that Art prescribes, to dry up that Matter wherewith the Part was ever fill'd; having us'd not only hard Bandge with expulsive Compresses, to hinder its gathering together and abode in the part; but also sudorifick Decoctions, tho' all in vain. I was also thinking, to make a Counter-Opening under the Thigh, to give a more free
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course to the Matter, and to hinder its Stay ; but on second thoughts, I believ'd it would be to no purpose.

M. Conte, and generally all who saw the Man, despair'd of his being cured ; and told me, that I vex'd my self in vain, as if all my Reputation had depended upon the Cure.

Although I had hitherto assay'd all sorts of Means in Vain, yet I was obstinately bent to find out some other Way, by my own Consideration ; seeing the wounded Person himself was also desperate.

As I have formerly said, I had hitherto kept in the Wound a little *Tent*, about two Finger's breadth long, and very soft : This I resolv'd altogether to lay aside, and to dress the Wound with a *Pledget* and *Plaster* only, and such a Bandage, as might be sufficient to keep 'em on.

This affrighted the poor dying Man ; and it was with great difficulty that now I could obtain his Consent, to have that power over him which of right belong'd to me, and what formerly he had so freely granted.

In the Evening to my great Surprise, I found him in a much better Condition : The Matter came not away in so great a quantity : That night he slept much better than ever yet he had done, since he receiv'd his Wound ; and in the Morning I found him yet better : This Evening the Matter began to be of a
good

good Consistence, and to be discharg'd in moderate quantity. Henceforth I dress'd but once a Day.

His *Fever*, which had continu'd from the beginning, left him altogether, the second Day after the leaving out of the *Tent*; and from the fourth, he was dress'd only once every other Day; he also began to eat, and to recover his Strength: from the eighth Day nothing further came from the Wound, and on the twelfth after the disuse of the *Tent*, he was intirely cur'd;—to the Truth of which I call *God* to witness.

REFLECTION.

This is the *Cure*, as I sincerely protest, to which I have been most oblig'd. It was this which made me embrace that *Method*, which now I expose to publick View; and which from this time forth succeeded so happily with me: and it is certain, that I had infallibly cur'd my Patient at once of all his distempers, if I had continued but only for seven or eight Days, to use a *Tent*, tho' never so small and soft.

From this time forward, I resolv'd to abandon the use of *Tents*, and to give my Advice in this Affair to the Publick, when once an opportunity should present it self. I communicated my Design to *M. Thouvenot*, Physician
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in ordinary, and Chief Surgeon to their *Royal Highnesses*, a Man of great Learning and Experience, to be esteem'd, as well for his profound Knowledge, as his eminent Vertue: And having related to him a discription of the Cure, he confirm'd me in my Opinion.

It was here therefore, in the King's Hospital settled at *Briançon*, that I drew out several *Observations* which I had made, and some Accounts I had kept of many Cures, done in different Times and Places; in order to make up a *Collection* of them, together with some others done in this Hospital.

But to return to the preceding Cure; it is convenient to observe, that tho' the Bullet was lodg'd in the Member, yet no Disadvantage did thereupon ensue to the Patient: which made me think for a time, that the Bullet, hitting upon the Belly of some large Muscle, might have rebounded the same way by which it enter'd. But I found my self out in my Calculation: for being at *Turin* about a Year and half after this Cure; I was sent for, from the *Cittadel* where I stay'd; and when I came, I found this same Person whom I had cur'd of his Wound, who shew'd me a little *Abscess* that was form'd upon the old Scar. I opened it without Difficulty, and perceiving something white and hard, with my Instrument I drew out the *Bullet*, which was flat, with a piece of the Thigh-bone sticking

ing to it: The Ulcer was quickly cur'd without any Inconvenience, and never more return'd.

Had I at first Dressing found out the Bullet, to the Misfortune of the Wounded Person, I should have been oblig'd by Custom, and the Rules of our Art, to draw it forth; tho' it had been, as indeed it was, sticking in such a part of the Bone, as was encompass'd with greatest Depth of Flesh. But for certain, it could not have been got out with such Ease; or without Pain, and griveous Irritations: Besides I question if the Patient, who was of a bilious Constitution, could have born up, under so tedious, and painful an *Operation*; seeing an infinite number of Accidents had been occasion'd, only by the touches of a little and very soft *Tent*. Wherefore I am perswaded, and am bold to affirm, that it is not always necessary, to draw forth the *Bullet*, when it is lodg'd in a Bone, that lyes deep under the Flesh: *Nature*, that is much wiser than we, has more gentle and easy ways; and best knows the time to free her self of what is hurtful to her.

Hippocrates in the fifth of his *Epidemicks* relates, that he drew forth the *Head* of an Arrow; from the *Groin* of a Man, after it remain'd *six Years* in his Body, without any Accident happening during all that Time.

Alexander

Alexander Benedictus reports, that a certain Man was wounded in the *Back* with an Arrow, the *Head* whereof could not be got out, being bearded, and two Finger's breadth in length: which yet two Months after the Wound was cured, the Patient voided by *Stool*.

Hildanus in his 6th *Observation* tells us, that he took out the point of a Knife, which had remain'd two years, among the acute Proceſſes of the *Verterbræ* of the Loins, without producing any Accident there.

Let us now therefore acknowledge that *Nature* is wonderful in her Operations ! These Examples, together with my own Experience, and Reason, have made me very cautious in drawing forth of *Bullets*, when they are not lodg'd in Places where they may marr, or quite destroy the Action of any Part; nor in danger of falling into some *Cavity*.

This Cure, is of it self enough to convince any one of the Advantage, and to establish the Credit of my Practice; it having been publickly perform'd, yea authoriz'd and approv'd by many learn'd Physicians, and skillful Surgeons of the Court of *Savoy*.

Since that time, I have in several Places, and in diverse Hospitals, cured many, who have had their Thighs pierced quite through, without either *Tents* or *Dilaters*; save only in the first Dressing, for supporting and containing the *Astringents* necessary to stop the Bleeding

ing. This is contrary to *Pareus* his Method, who in the thirty seventh Chapter of his tenth Book of *Wounds* affirms, that Wounds of the Thighs and Legs ought to be kept long open, that the corrupted Membranes may have time to suppurate and come away: as if, indeed, *Nature* that has brought solid Bodies, such as *Iron*, *Bullets*, *Bones*, &c. to the Orifice of Wounds, even after they have been a considerable time cicatriz'd, as hath been formerly observ'd, were not of sufficient Power and Sagacity, to expell some Shreds of corrupted Membranes.

But to avoid corrupting of the Part, the Wounds must be *speedily* clos'd up; *Tents* and *Dilaters* laid aside; the *Air* must be carefully excluded from the wounded Parts, great *Suppuratives* must be cashier'd; and we must dress as *quickly*, and as *seldom* as possible.

C H A P. XXVII.

Of the Knees.

OBSERVATION XXVI.

IN the Year 1691. when I was at *Pignerol*, a Captain of a Battalion of the King's Regiment, commanded by *M. de Launay*, was wounded in the right *Knee* with a Bullet, which

which went in at the outward and middle, and came out at the inward and upper part thereof. He was dress'd for four whole Months by a Surgeon of the Army, very well skill'd in his Employment, but who followed the common Method: He had also advis'd with the Surgeon Major of *Pignerol*, who had given over hopes of the Cure. The Surgeon that had him under Cure, not thinking to make any long stay in this City, propos'd to me, after so long a time, to undertake the Care of dressing him; which I also did.

I found five or six *Holes* in his Knee, all of them fill'd with *Tents* that were hard, and long enough to reach to the Bottom. His Leg and Foot were swell'd, his Body very thin, and he had a slight Fever, which had never left him from the first time he receiv'd his Wound, with perpetual Watchings, and a Loathing of all kind of Food.

I began to leave out all the *Tents*, and with a small Incision at the lowest Part thereof, I dilated the Wound: I laid aside the Aromatick Wine, that had been so long us'd to no purpose; and left off the use of a certain Injection, which being apply'd twice a Day, by the Intolerable Pains it occasion'd, had mangled all the Joynt, and caus'd a communication amongst all the *Holes*, which were exactly stop't with the Fingers, every time that

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Medicine

Medicine was employ'd, that it might make some Stay in the Part.

I dress'd him indeed with the Remedies, that had been formerly us'd; but I took Care to apply them more conveniently, and to accommodate 'em better to the Nature of the Part, and of the Wound.

When I came to see him the Day following, so soon as he saw me he embrac'd me, and swore in the presence of many Officers, that he was inexpressibly oblig'd to me: And, which was no less surprising than true, he told me, that he had slept all Night, tho' he had not done so, since the first Day of his Wound: that he felt no more Pain in his Knee, and believed his Fever was gone.

He was so encourag'd with this good Success, that from that time forth he thought himself cured. For five or six Days, he was dress'd after the same manner once a Day; and after that once every other Day; neither did I change the Oyntments and Plaisters, which had been so long us'd before without any Advantage. The Cure was compleated in less than a Month: After which I advis'd him to go into his own Country, there to use the *Waters*, in order to strengthen the Part that was weakened by the frequent Dressing, and if possible to enable him freely to extend it.

REFLECTION.

It appears by this Cure, that a *good Method* is the most effectual Remedy, and the principal Instrument in healing Wounds. If any Man will but be at the Pains, to ponder this Case, I doubt not but he will be convinc'd, that the *Tents*, the *Injection*, and the other humid things wherewith the Part was perpetually moistened, were the Cause of the deplorable Condition of the Wound. Now if such a thing, as it often falls out, had happen'd to a common Soldier, under necessity of being sent to an Hospital, and treated in the common Way ; he must have endur'd twenty Deaths by the tedious and painful Dressings : yea, it is certain, that he could never have held up under them ; being at the same time depriv'd of all necessary Conveniences, breathing in an unhealthful and corrupted Air, and having Food, neither so nourishing, nor given him at such seasonable times, as a Captain might, who was willing to spare nothing, that might conduce to the Preservation of his Life.

The Account I have given of this Cure, has nothing in it which is not exactly conformable to the Truth. The Gentleman who was wounded himself made the same Relation to M. *Goiffons*, a very learn'd and experienc'd Physician of

Lyon, and Chief Physician of the King's Armies in *Italy*.

'Tis true, the Wounds of the Joynts require very great Care, there being few that are obnoxious to more troublesom Accidents : and when the Part is much shatter'd, they are judg'd mortal. However I am very certain that great Abuse is committed, in the manner of Dressing them ; and this I judg'd myself oblig'd not to conceal.

The *Joynts* moreover, are nervous or tendinous Parts, and are known to be of a cold and moist Temperament : wherefore they must be guarded from the Attacks of the *Air* ; they must not be exasperated by the Touches of *Tents* and *Dilators* ; *putrifying Medicines* must be suppress'd, because they weaken the Parts to which they are apply'd, and ruin these that are nervous and tendinous.

All these liquid things which are commonly us'd, are also hurtful to the Joynts ; such as Aromatick Wine, Fomentations, and Injections, &c. Such things as are heating and drying are profitable : We must endeavour to hinder the Waste of the Spirits ; and seasonably to perform the necessary Diversions ; observing a drying and slender Diet, and using to the Wound Sarcotick Medicines, such as Balsams, or Spirit off Wine ; avoiding also long and frequent Dressings. If this Method is followed, all these Accidents, which ordinarily

rily accompany Wounds of this Nature, will be prevented.

Fabricius ab Aquapendente, in his first Part, Book I. Chap. 49. treating of Wounds in the Joynts, says, That they are not only extremely hard to be cur'd, but also dangerous and mortal; and he adds, that the Cure is dangerous and difficult, both in regard of their own Essence, and also of that of the Joynts: for *Nature* being the Cause that produces Flesh, and fills up Wounds, is less vigorous in the Joynts, which are cold in Temper, and destitute of Blood and Flesh, than elsewhere; especially when weakened yet further by a Wound.

Afterwards in the same Chapter, being supported by the Authority of *Galen*, in his third Book Of *Fractures*, he affirms, That whatever lies under the Skin, is advantag'd by being cover'd therewith: and considering that the Joynts are cold, without Blood, and without Flesh, he says that their natural Heat is soon extinguished, especially when expos'd to the Cold of the *Air*. These were the Thoughts of this Author, who was accustomed to use the *Stitch* on such Occasions, to protect this kind of Wounds, from the Injuries of the *Air*.

He further adds in the same Chapter, that Wounds in the Joynts ought not to be left open, or expos'd to the cold *Air*, because thereby we run the hazard of quenching the Natural

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Heat, and of a *Gangrene* ; or if this should not fall out, yet is there seldom seen any Digestion in the Wound, when so treated.

These Parts then, as hath been said, are naturally very weak, destitute of Heat, and plentifully watered with Moisture ; which by reason of the abounding Salts, is apt to contract an Acrimony and Malignity ; especially when it is retain'd in the Part with *Tents* : Now this same Moisture, insinuating it self into the Pores of the nervous Fibers, fails not to harden them, and render them callous ; from whence it comes, that these Wounds often end in *Fistula's*. 'Tis observable also, that if there happen any Change or Disorder in the Blood, this Humour becomes so corrosive, that it rots the Bones, and destroys the Parts where it comes. Long and frequent Dressing moreover, occasion the like Accidents, because of the Admission of the *Air*, that increases the force of the Acids, and easily destroys that small Portion of Spirits and Heat, with which these Parts are furnish'd.

All these things are of the greatest Importance, and well deserve our serious Consideration : and if *Reason* in any thing ought to prevail over *Custom*, 'tis chiefly here, where the Life of Mankind is concern'd, which is a thing so precious, that it very well Merits our most particular Care.

After

After all, I am of the Mind, that the Authority of so famous a Person as *Fabricius ab Aquapendente*, ought to give some Reputation to my Opinion. But before I conclude this Chapter I will moreover affirm, that if Wounds in the Joynts are hard to be cur'd, and often degenerate into *Fistula's*; this is not so much owing to the weakness of these Parts, as to the Manner, us'd by most part of Surgeons, in dressing them.

CHAP. XXVIII.

Of the Leg.

OBSERVATION XXVII.

ONE *La Grandeur*, who was of the Guards of the *Marshall de Catinat*, General of the King's Forces in *Italy*, being at the Siege of *Luxemburg* in the Year 1684. had received a Wound, with the Shiver of a *Granade*, in the left Leg, which left behind it an Ulcer near the inward Ankle, that had baffled the Care of the Surgeons.

This Man being at *Pignerol*, about the beginning of the Year 1692. took a Resolution to have his Ulcer cur'd, tho' it had been of a pretty long standing, and was to him instead of an Issue. Here he finds a Surgeon pliant enough

enough; who, without foreseeing what Accidents might follow, or considering the Evil Disposition of Body, and the bad Constitution of the Patient, takes him in Hand, dresses him, and heals up this Ulcer.

But in a little time after, he had ample Occasion to repent the rashness of his undertaking: For the impure Humors of that unwholsom Body, which had taken their Course that Way, not finding any Outgate, were by degrees gathered together in the Member, and by their Stay, arriv'd at a pitch of Malignity sufficient to cause a *Gangrene*.

On the middle and inward Part of the Leg there arose a *Tumor*, or swelling, which was forthwith taken by his Surgeon, who had very little understanding in such Cases, for a *Phlegmon*; whereupon without further Deliberation, he begins with Bleeding, which he repeated five or six Times.

The Humour retain'd in the Part, not being able to come to a perfect Concoction, because of the defect of Heat and Spirits, made its malignity appear, and corrupted a great Part of the Leg. The *Gangrene* appeared: And the Surgeon made an opening in the highest part of the *Tumor*, from whence came forth a little foetial *Lympha*. But the Disease increasing every Moment, both the Patient and the Surgeon were alarm'd, and sought out for
some

some Body to advise with, about cutting off the Member.

I was order'd by the *Marquess of Chamlay*, who was then at *Pignerol*, to go see him, and to employ my utmost Care to retrieve him if possible, from that miserable Condition. I made incisions in his Leg, from the Knee to the Ankle on the inside, and touch'd it with a very piercing Spirit so far as the Gangrene reach'd : I ordered for the Patient the strongest Cordials, not forgetting *Oriental Bezoar*, and generous Wine, which I caus'd to be given him from time to time.

Three Days pass'd over, in spite of all I could do, before a Stop was put to the progress of the *Gangrene* : The unseasonable Bleedings, his Diet, his Fever, and the other Evils with which he was oppress'd, had so impair'd his Strength, that nothing could be hop'd therefrom. Nevertheless, I judg'd no Way wou'd be more compendious and effectual, than that of *Sweat*, to withstand the Evil in its Principle, and to ease *Nature* overwhelmed with a World of Impurities : Wherefore I did my Endeavour to procure it ; and for that Purpose made him take one Evening a gentle *Sudorifick*.

This Remedy had all the success I could expect ; the Patient sweated a little that Night, which forthwith put a stop to the Course of the *Gangrene*. The Escar came away but very

slowly, because of the weakness of the Patient. But when this was intirely separated, another Accident superven'd, which threw us into a new perplexity : For a large *Tendon* that had been altered by the *Gangrene*, and was wasted by the Suppuration, being joyn'd to its Original by a small Portion only, drew after it the Matter ; and notwithstanding all our Care, form'd a very considerable *Abscess* under the Joynt of the Knee, which by encreasing by little and little overspread all the hinder Part of the Thigh.

I dilated the Wound, making a fresh Incision, wherein I put a very small Dilater, to hinder its closing up : I us'd the Dilater for seven or eight Days, in which time the Matter increas'd, the *Sinus* was enlarg'd, and the Thigh swell'd and became painful.

I resolv'd then, to find the most *depending* Part, that I might there make a Counter-Opening, whereby to give a passage to the Humors, and to hinder their Abode in the Part : so I made a mark without, upon the Place I destin'd for that Operation.

Nevertheless, I was willing first, to try all other means I could think on : I begun to leave out the *Dilater*, which I had only kept between the Lips of the Wound, not suffering it to pass into the Cavity of the Ulcer : so I drest the Wound only with a Pledget, and a Plaister, and such a Bandage as might keep them on. The

The next Day, very little Matter came away ; and the Day after that, yet less : The swelling, and Pain of the Thigh were diminished ; the large and deep *Sinus* was fill'd up in four or five Days ; thus the Operation I design'd was prevented, and the Patient cur'd in ten or twelve Days after.

REFLECTION.

'Tis no wonder, that very many able Surgeons, have been deceiv'd, without perceiving it, in the too frequent use of *Tents*, and *Dilaters*, these fatal Instruments ; seeing I, who had bid them open difiance. could not keep my self from a Surprise : And indeed he must be a capital Enemy to 'em, and have experienc'd their pernicious consequences, who can imagine that a thing so small, as this *Tent* was, could occasion such considerable Accidents.

I was much amaz'd at this Event, and confirmed thereby in my Aversion for *Tents* and *Dilaters* ; resolving now to use more Caution than ever, if I shou'd at any Time be necessitated to use them.

I willingly own, that the Collection of Matter under the Thigh was not occasion'd by *Tents* : They are not always the Cause of Impostumations, nor of the Accidents that follow. Notwithstanding their Use contributes
much

much to delay the Cure, and to render the Symptoms were obstinate, as may be seen by the preceeding Cure: For after the widening of the Sore, a free passage being given, the Matter would have been discharg'd insensibly, and without Intermission, if it had not been hindered by the *Dilater*; which, how little soever, was yet sufficient to obstruct its passage.

I hope then, I shall not be thought without good Reason, to have done my endeavour to put down the use of *Tents*, seeing it is attended with such pernicious Consequences. 'Tis easy to judge, that if a little *Dilater*, about the bigness of a middle-siz'd Bean, was able to occasion such troublesome Symptoms; a long and thick one, must have caus'd much more Irritation and Disorder. If I had continued to use that Extraneous Body yet eight Days longer, it would have brought on a new Mortification, which at that Time, might have laid the Patient in his Grave, considering the deplorable Estate he was reduc'd to by his former Distempers.

C H A P. XXIX.

Of another Hurt in the Leg.

O B S E R V A T I O N XXVIII.

I N that same Year, when I was in the Hospital of *Brianſon*, there was brought thither a Soldier of the Colonel's Company in *Catinat's* Regiment of Foot, who had both the *Bones* of his *left Leg* broken together with a *Wound*, two Fingers breadth below the *Garter*: This Accident befell him upon the Works of the foreſaid City.

The lower part of the *Tibia*, came out at the Wound, and paſſ'd over its upper Part two Fingers breadth; wherefore we were neceſſitated to make a vigorous Extenſion, before we could put all things in their right Place: We joyued the Lips of the Wound, and dreſſ'd with Pledgets only; having made an Embrocation, to diſſolve a very conſiderable Bruiſe, to which we apply'd our *Diapalma* diſſolv'd: Two or three Fingers breadth above the Fracture, we encompaſſ'd the Member with a little Roller, uſing another in like manner below it; the ſpace between we fill'd up with double Compreſſes, dipt in Wine or Brandy: under the Leg we us'd a Paſt-board,

to

to hinder its bending at the Fracture, and over this the Bandage with eighteen tails ; Finally, having made all fast with the Juncks, and their furniture ; Diversions were made in due time, and a Course of Diet ordered.

By reason of the Contusion, we were forc'd to dress once a Day ; which we did without undoing the Rollers, or giving any trouble to the Member ; and when I saw the Bruise, begin to be dissipated, from which I had fear'd some Accidents, he was dress'd but once in two Days : On the twelfth Day, we took off the Rollers, that we might straiten them a little ; which we did in such a manner, that the Bones remain'd streight and unmov'd ; the Wound then had begun to fill up ; and there was not the least Exfoliation, nor Separation of any Bone.

The Wound was compleatly cur'd in nineteen or twenty Days ; after which we us'd the Rollers, with Splints and the Juncks upon the Place of the Fracture.

This Patient was pretty fortunate in this, that during the Cure he had not felt the least Disturbance, or Inconvenience ; notwithstanding of the Unwholsomness of the Beds in the Hospitals of the Army : After forty Days the Juncks were laid aside, and he began to walk with Crutches ; and in a Month after he return'd to the Regiment.

REFLECTION.

By this Cure, which was publickly perform'd, it appears; that it is not absolutely necessary, to widen the Wound in complicated Fractures, as some are of Opinion; for so soon as it is dilated, the Cavity is fill'd with Matter, that slides in between the broken Bones; and being once there, it is impossible to bring it away, or hinder its Stay; and thus it alters and rots the Bone which it touches; it dilutes and depraves the nutritious Juice thereof, mixing with it, and rendring it unfit for breeding a *Callus*: Finally, it causes Exfoliations and Separations of Bones from the Extremities of the Fracture; and oftentimes sliding along the Bone upon the *Periosteum*, produces Abscesses, and *Sinusses* very hard to be cur'd.

The Patient all this time, is in very great danger; chiefly in an Hospital, where he is every day tormented once, and often twice, with long and painful Dressing. The Part is weakened, and the whole Body wasted away. Besides 'tis observable that but few Fractures that are accompany'd with a Wound, are ever cur'd in Hospitals, especially when dress'd according to the ordinary Method; and above all, these of the *Thighs* and *Legs*, where the Wounded is confin'd to his Bed, are most seldom cur'd.

Among

Among all the Ancients that I have read, I find none that more favours my Method of treating complicated Fractures, than *Fabricius ab Aquapendente*; for in his first Part, Book 4. Chap. 9. and in many other Places of his Works, he is not for dilating such kind of Wounds; but leaves the Separation of Bones to *Nature's* conduct: And tho' he expect, that some Splinters of Bones are to come away, yet he fails not to stitch up the Wound: For, says he, *Nature* will never cure a Wound, in that Place where a Bone is to be excluded; wherefore we ought to endeavour, to heal up such Wounds; which we shall not be able to effect, unless *Nature* Judge it convenient, and find that their remaining open would be unprofitable.

C H A P. XXX.

Of a third Wound in the Leg.

OBSERVATION XXIX.

ON the fifteenth of June, 1698. a Mason, call'd *La pierre*, was sent from *Mont Dauphin*, to the Hospital at *Brainson*, who laboring on the Fortifications of that Place, had the inner Bone of his right Leg broken about the middle

middle, with a Wound six Fingers breadth long, and two in width. This was one of the most considerable Fractures that had come under our Care in this Hospital, and yet one of these that were soonest cur'd.

After we had reduc'd the Fracture, we joyned the Wound, and dress'd it with a good Incarnative; we fomented where it was necessary, and put on the Dressings in the manner above describ'd, we perform'd the usual Diversions, and left all untouch'd for three Days. We dress'd it a second time after the same manner, letting it alone again other three Days: In fine, at the fourth dressing, that is upon the twelfth Day from the first dressing, the Wound was quite fill'd up, and more than half skin'd over; wherefore straightway, as gently as was possible, we took off the Bandage with eighteen tails, using instead thereof Rollers, with light and easy Splents upon the Fracture: no Accident happen'd during all the time. In forty Days space he was able to walk with Sticks, which also he laid aside soon after.

REFLECTION.

This wounded Man was shewed as a Prodigy, to all who came to the Hospital. Tho' this Cure had been the only one, I had ever perform'd this way; yet the Success I had therein, had been sufficient to convince me of the

the Excellency of this *Method* ; and to engage me to follow it during my Life. But seeing it is moreover supported and approv'd by *Authors* , and confirmed by many other Cures of a like Nature ; all the pretended Reasons that may be brought against it, will prove too weak to overthrow it, and will be slighted by all Men of good Sense, and Lovers of the Truth : And whatsoever may be said in order to censure it, will be so far from lessening its Merit, that it will rather heighten the Esteem thereof.

In the last Part of this Work, where I treat of Fractures that are attended with a Wound, I give some Reasons, further to justify this way of Practice.

C H A P. XXXI.

Another Case, whereby this Way of Dressing complicated Fractures of the Legs ; is confirm'd.

OBSERVATION XXX.

A Soldier call'd *La Violette*, of the Regiment of *Nivernois*, and Company of *Bonal*, was brought to the Kings Hospital, settled at the Abby of *Oulx*, on the first of May 1696. He had

had two Wounds upon the *Os sincipitis* of the right side with the Bone uncover'd; all his Face was bruise'd; three of the true Ribs on the same Side, were forc'd inwards; he had many Bruises on his Body; his right Arm was out of Joynt; and the Hand all torn; both his Legs were broken and shatter'd, the Right one without a Wound, and the Left with one: All which Havock was caus'd by a Fall from a very high Rock, near the Barrier of the *Fort d' Exille*.

All his Wounds were dress'd, but these of his *Head*, which were not observ'd till the next Day. His Arm was reduced; his right Leg, which was broken about three Fingers breadth above the Ankle, was dress'd with the circular Bandage; the left with that of eighteen tails; the *Tibia* was broken to pieces in the middle; many of the Splinters were out of their Places, being unloos'd from the Bone at one End; and so could not be brought together, and altogether set right in the first Dressings; the Orifice of the Wound was not large, and we did not dilate it: It bled indifferent much for the three or four first Days. I let the bleeding stay of it self, without using Astringents. I let him Blood many Times, both in regard of the Contusions and Fractures, and also because of the forcing in of the Ribs, which occasion'd a great difficulty of breathing. I caus'd a hole to be made in the Straw-Bed
and

and Cloathes, which was sowed round, to afford him the conveniency of going to Stool, without being removed; it being impossible to touch him, without putting him to grievous Torments. The Wounds in the Head were soon fill'd up, without any apparent Exfoliation; the Bruises in his Face were remov'd; his Ribs were restor'd by means of sticking Plaisters; and the difficulty of breathing, continu'd but for six or seven Days: The Dislocation of his Arm, and the Wounds of his Hand gave us no trouble: The simple Fracture, tho' the Bone was shatter'd, was not follow'd with any Accident: the Wound of the compound one, was compleatly heal'd in eight or nine Days; after which, we put little Bolsters upon the protuberant pieces of the shattered Bone, tying them on with Rollers; which had so good success, that at the next Dressing, no inequality was to be seen. About the fortieth Day after the receiving his Fall he was able to stand up with Crutches; and his left Leg that had the complicated Fracture, was stronger and more clever, than the Right, that had the simple one only; which was much admir'd by many.

REFLECTION.

This Cure may be of excellent Use, to establish the Credit of the others, if there is any need.

need thereof. That which makes it remarkable, is, the two Fractures of a different Kind, in the same Person, one of them being complicated, which yet was soonest cur'd; and the Patient was able to use the Leg wherein it was, before the other. *M. Davejan*, and *M. Michellet*, the King's Physicians in this Hospital, knowing Men, and beyond all Exception, were Witnesses of what I have here related; and know that I have added nothing to the Truth: 'tis thought also, that this is the first time, that a complicated Fracture was dress'd after this manner in this Hospital, tho' it be of a pretty long standing. These same Gentlemen have oftentimes seen, Wounds no less considerable than these, brought by the same Method to a speedy and happy Cure.

I believe indeed, that the strong Constitution of the Patient, conduced much to the good Success of the Cure; but it is no less true, that the requisite Diversions were not delayed, whereby whatever might have occasion'd troublesome Accidents, was remov'd: moreover, he was gently treated in dressing, and the Sores were not exasperated, so that in the first Days he felt but a very slight Pain: He rested well, and was able to take with much ease, such Food as was proper for him.

You will very seldom see, a wounded Person in so deplorable a Condition, as this Man was: All the Parts of his Body, were either wounded,

wounded, or bruis'd: Had but any Accident followed, Death had been unavoidable, and our Care in vain: and if the *Dissolvents* and *Diaphoreticks*, had not unloaded the Parts, promoting the Circulation of the Blood, and Course of the Humors by a gentle and insensible Transpiration, I doubt the Event had neither been so sudden, nor so desirable.

'Tis well known, that in Practice, there is a great difference made between Fractures not accompanied with a Wound, and those that are: in many Places, the latter are accounted very hard to be cur'd, and often are Judg'd incurable; especially those of the lower Extremities, that indispenfibly oblige the Patient to keep his Bed.

I don't question but very many, especially the *Admirers* of *Antiquity*, will find fault with this *Method*, and reject my *Rules*; but let them, with all my Heart, charitably oblige the Publick, with more easy and more sure *Ways*, and confirm them with *unquestionable Experience*, and I promise them, to be among the first that shall embrace their Party.

C H A P. XXXII.

Of the Feet.

OBSERVATION XXXI.

UPON the 25th of *June* of the same Year 1696, an Irish Gentleman, call'd *John Donoughal*, Nephew to Lieutenant-Colonel *Athlone*, was brought to the Hospital of *Brianſon*, having been wounded at an Action in the Valley of *Barcelonetta*. He was ſhot into the right Foot: and the Bullet entring on the upper and foremoſt part of the *Metatarſus* towards the Side, was lodg'd between two Bones of the ſame Part.

A Surgeon, upon the Spot, did whatever he could, to draw out the Bullet, by the ſame way it entred; but his Endeavours prov'd fruitleſs.

The firſt Day that I dreſt it, after I had conſider'd the Wound, and obſerv'd the Way of the Bullet, I found it could not be got out, unleſs a *Counter-Opening* were made; which accordingly was done, at the middle and hinder Part of the *Metatarſus*, and the Bullet was drawn out with very little Pain.

The

The Wounds were dress'd according to our Method, with Embrocations over all the Part ; Diversions were not omitted, and he was dress'd but once a Day with our simple Remedies, and the Plaister of dissolv'd *Diapalma*.

The *Escar* being separated, no great *Suppuration* ensu'd ; no Bones came away, at least that we could observe : henceforth he was dress'd but every other Day, and was cur'd in thirty Days, or thereabouts ; after which time he return'd on Foot to his Regiment.

REFLECTION.

'Tis almost universally known, that *Wounds* of the *Extremities*, accompany'd with a *Fracture*, are tedious and troublesome to be cur'd : the *Tendons* and *Nerves* that here abound, make these Parts of a quick Sense, and render the Wounds therein, obnoxious to grievous Accidents : therefore it is that they require to be dress'd with much *Gentleness*, and Remedies particularly suited to 'em. I have elsewhere remark'd, that *Tents*, and *putrifying Medicines*, are extremely hurtful to Nervous and Tendinous Parts, wherefore I shall speak no more of them. I shall only here take notice, that some prepossess'd Persons have had the confidence to say, that this *Way* of Dressing, so gentle and so easy, has something of Rashness in it ; that it is very dangerous to omit the
Circum-

Circumstances observ'd by the Ancients ; that their Rules, were not laid down without good Reason ; and that their Method, in Fine, ought to be put in Practice among the Soldiers. Tho' *Reason* and *Experience* are both on my Side ; yet I am ready further to maintain, that this Method has nothing of *Temerity* in it, seeing it follows the Footsteps of *Nature*, which ought ever to be our Guide in the Curing of Wounds. We can never go astray, if we follow her Conduct ; and if we swerve from her Paths, we can't but fall headlong into Dangers.

Mereover, it is no less necessary, to be an able Surgeon, and expert in Practice, in order to manage a Cure according to this Method, that appears so easie ; than according to the common way of Practice, which is full of so many Circumstances that are ever unprofitable, and oftentimes pernicious. And we may reasonably presume, if our *Method* has been so successful, when practis'd on Soldiers dieted and dress'd in an Hospital, where the *Air* is oftentimes *infected* ; that it will yet be much more so when used towards Patients, who have all the Conveniences of *Life*, and who *breath* in a pure *Air*.

C A A P. XXXIII.

Of the Feet.

OBSERVATION XXXII.

WHEN I was at *Luſerne*, in the Year 1688. a Soldier of the Trained-Bands, was brought to the Hospital there; who had receiv'd a ſhot in his right Foot, that was pretty remarkable for the way of the Bullet; which was of a very ſmall Size. It enter'd at the inward and middle part of the great Toe, and came out at the end of the little one; no Excoriation appearing either above or below.

The firſt and ſecond Bones of the great Toe were broken: the ſecond of the three next, were intirely crush'd to pieces; and the laſt of the little Toe in like manner.

When we parted the Toes one from another, a great many little pieces of Bones were to be ſeen, which ſeem'd only to hang by a Thread. I firſt ſet to rights every Bone by it ſelf; and afterward ſet them in order one with another: between every Toe and its fellow, I gently ſlipt in a little piece of Linnen, dipt in *Spirit of Wine*; and I made ſmall Compreſſes pretty hard and longiſh, which I put
above

above, and under the Toes, in form of Splents, being wet also with *Spirit of Wine*: I wrapt all up in Linnen, without Oyntments or Plasters; and supported the Foot with a Sole, sustaining all with an easie Bandage.

I took off the Dressings after two Days, and without removing the little pieces of Linnen between the Toes, I fomented all the Part with *Spirit of Wine*, and dress'd it as before: the Suppuration was but very small; and indeed it was with Design to prevent it that I us'd nothing but the *Spirit of Wine*; which was the only Remedy I employ'd to compleat the Cure: this was effected in about three Weeks time, without the coming away of the least bit of the Bones, tho' they had been intirely shatter'd to Pieces.

REFLECTION.

All Experience assures us, that 'tis *Nature* and a good *Method* that effect the Cure, and not at all either the great Labour, or vast Charges bestowed upon it. If I had used in this Case the ordinary Oyntments and putrefying Medicines, they would have occasion'd a plentiful Suppuration, whereby the Splinters of the Bones had been loosen'd, and brought away, the Cure had been delayed, and possibly the Toes lost; which had been enough to render the Patient lame for all his Life.

Tho' this Cure is not of great Consequence, yet the Conduct therein us'd, may suffice to shew, that the Bones do easily enough reunite, when they enjoy the necessary Repose; when the Air has no time to alter them, or to exert its Efficacy in the Wound; and when the use of Suppurative Remedies is laid aside, which are ever hurtful, as has been above observ'd: and I will here add, as to the last mention'd Medicines, I know no kind of Wound, in what part of the Body soever, that does absolutely stand in need of them.

But lest I should weary my Reader, with unprofitable Repetitions, I shall content myself, with having describ'd the two preceding Cures of *Wounds in the Feet*: tho' in this *Hospital*, we have had a great number of this Nature through our Hands, that have had a most *Happy and comfortable Event*.

C H A P. XXXIV.

The Conclusion of the Second Part.

IF my weak *Reasonings*, and the *Authorities* I have adduc'd, together with the *Experiences*, which I have faithfully related, shall not prove sufficient, to convince some Persons of the *Excellency* of my *Method*; I have only one *Request* to make, to such as shall withhold their

their *Approbation*, which is, that they wou'd make a *Trial thereof* themselves.

I could have recited, a very great number of Cures, like unto these contain'd in this second Part: I could have describ'd the Cures I have performed on wounded Persons in my *Travels*; or in the *Army*, where Occasions of this Nature daily present themselves, because of the Actions that ordinarily fall out: such are those of the Valley of *Barcelonetta*, and the Battel of *Marseills*, fought Oct. 4. 1693. But this would have been, for the most part, to say the same things over and over again; all these Cures being manag'd well nigh after the same Way.

I suppose, it will be easily enough believ'd, that I could have enlarged the bulk of this Volume, with many other *Observations*; seeing it is a Truth, that in four Years time, wherein I have been in this Place, more than *three Thousand Persons* have gone from it completely cur'd.

Some there are, who, not being able to discover the genuin Cause, of the desirable Success, that has attended the Cures, done in this Hospital; and willing to blast the Reputation of a *Method*, to which only they were owing; have attributed all to *Chance*, and have given out that we have been accompanied with an Extraordinary *Good Fortune*: as if forsooth, the Curing of Wounds were like a

Game at Cards, or throwing of Dice ; or as if blind Chance had any thing to do, where Experience and good Conduct are so indispensibly necessary.

I have hitherto only treated of such Wounds, as were very considerable, and were almost all somewhat complicated : from whence I hope it will be believ'd, that simple Wounds, where-with I was unwilling to fill up this Part, were cur'd, after this Method, with much more Speed and Ease, than those here related.

It may possible be thought strange, that in certain Cures of single Centinels, describ'd in this second Part, I have declared that I us'd, on different Occasions, the *Balsam of Peru* ; which is scarcely probable, considering the Place, and the Condition of the Persons. This I own ; and do nevertheless aver, that I have said nothing but the Truth : But when it is considered, that his *Royal Highness* the *Duke of Savoy*, sent his Apothecary to *Luserne*, with Orders to supply himself from thence, with whatever was most precious ; and to furnish a most compleat Shop of Medicines, for the Hospital of that Place, what I have said will easily be believ'd ; seeing not only that Remedy, but also *Pearls*, *Bexoar*, and the most costly Cordials, were bought up, and us'd freely, and without Distinction.

The

T H E

Hospital-Surgeon :

O R,

A New, Gentle, and Easie Way, to Cure
speedily all sorts of WOUNDS.

P A R T III.

*Exhibiting a General View of the Author's new
Way of Practice, not only with respect to
Wounds, but in other Cases belonging to Sur-
gery ; and a Description of the simple Re-
medies he uses : With some Observations.*

C H A P. I.

*The Design of this Part : And what it
contains.*

ALtho' in the preceeding *Parts* of
this Book, where I declare the *Ad-
vantages*, and *Excellency* of this *Way*,
confirming the same by *Reason*, *Au-
thority*, and manifold *Experiences*, I have suffi-
ciently made known my *Practice*, with Relati-

on to *Wounds*; yet, because it is there delivered without any Method, and with frequent Interruptions, being interwoven with my Reasonings and Observations, I shall for the Ease, and Advantage of my *Reader*, but especially of the *young Surgeon*, in this *third Part* give a general *Prospect*, as it were at once, of all the Parts of my Practice; and that not only in what concerns *Wounds*, to which I principally confin'd my self in the two former *Parts*, but also in other *Cases*, that fall under the Surgeon's Care.

I will likewise here, ingenuously and without Reserve, give a Description of the *simple* and *easy Remedies* which I have us'd as well in the Cure of *Wounds*, as in that of other *Distempers* that come within the Jurisdiction of *Surger*y; the *happy* and *comfortable* Effects that I have so frequently seen produc'd by them, is enough in my Opinion, to recommend them to the Esteem and Use of the Wise and unprejudicated Artist, and who candidly designs the Good of such of his fellow Creatures, as fly to him for a Refuge in their Distress.

Finally, I will as I go along, deliver some *Observations* very *instructive*, and *useful* to illustrate and confirm the Subjects, for the sake of which they are adduc'd: to which, when necessary, *Reflections* shall be subjoyn'd. I shall begin with *Tumors* and *Abscesses*.

C H A-P. II.

Of Tumors and Abscesses,

Monsieur Bertrand, a Physician of *Marseils*, in his *New Reflections upon Acid and Alkali*; gives, in few Words, a very clear, and exact Notion of the Nature of *Tumors*. But seeing I am confined, by my proposed Design, only to declare my Practice with respect to them; those who desire to search into their Causes, and examine their Differences, must consult such Authors as have written upon them.

The *Moderns*, are not well agreed with the *Ancients*, in this Matter; for since the *Circulation* of the *Blood* has been found out, the true Causes of many Accidents, that fall out in the Cure of *Tumors*, have been discover'd, which the *Ancients* explain'd, in a manner altogether different.

Wherefore, seeing a Disease, after its Nature is understood, is easy to be cur'd, if one brings but a little Application of Mind; the young Surgeon, will do well to search into the Causes of Tumors, in the Works of the *Moderns*, where also he will find suitable Remedies. *Et-mullerus* in his *Medicinal Surgery*, describes a

great number of very proper Medicines ; as also *M. Verdue* in his Book call'd *Pathalogie de Chirurgie*.

This only I will say by the by ; that the *Tumors* that are accompanied with Inflammation, such as a *Phlegmon*, and an *Erysipelas*, have more need of *Dissolving* than *Repercussive Medicines* : I was confirm'd by Experience in his Opinion, and the Truth thereof at this Day is not doubted ; tho' yet it is contrary to the Rules of the Ancients : For a *Phlegmon* proceeding from an internal Cause, according to the Moderns, is nothing else but an Obstruction of the Vessels ; and that from an external Cause may be accounted of the same Nature. This Accident does very commonly happen in *Gunshot-Wounds* : Under which Head, we will speak a Word or two thereof.

According to these Principles, *Resolvents* are absolutely necessary in order to fulfil the first Intention, which is to dissolve or to cause transpire the accumulated Humor.

An *Erysipelas*, according to these same Moderns, is caus'd by a subtil and Volatil Acid, diffus'd over the *Skin*, or the *Muscles* : *Dissolving Medicines* are also proper in this Disease : *Spirit of Wine* prepar'd with *Camphire*, the *Sugar of Lead*, or *Elder-Vinegar* may be us'd.

The Accidents that follow upon a great *Erysipelas*, are frightful and violent. I remember, that when I was at *Luferne*, a certain Person

Person who had a *Fever*, was seiz'd with a lik^e *Distemper*; it reach'd from the middle of th^e *Thigh* to the *Heel*: He was not so wise, as to give us notice of it in time, but kept the whol^e Part out of the Bed for a whole Night, in a pretty cold Season; which caus'd such a *Repercussion*, that on the Morrow all the Part was gangren'd, and all our Care and Diligence could not prevent its intire Mortification; for in a very little time the *Gangrene* turn'd to a *Sphacelus*. Before he dy'd the one half of his Body was intirely corrupted and putrify'd: I never saw so dreadful a Sight, or smelt so intollerable a Smell: For not only the Hospital, but even the whole City was in danger of being infected thereby, when he was yet alive.

When an *Erysipelas*, will not yield to dissolving Remedies, we ought without delay to have recourse to *Scarification* of the whole Part, to give a passage to the Blood; and moreover we shou'd foment the whole Part with *Spirit of Wine* prepar'd with *Camphire*, or some other Spirituous and piercing Liquor: *Vinegar*, wherein *Sal armoniac* is dissolv'd, or *common Salt* when that is wanting, may also be us'd. Notwithstanding it is not to be thought that Repelling Medicines, are altogether to be laid aside; only 'tis fit we know how to use them in suitable Occasions.

In the Year 1693. *M. Deckamp*, then Commander of the third Battallion of *Sault*, but
now

now Lieutenant Colonel of the same Regiment, having an *Erysipelas* in his Leg, had been treated, with the *Dissolving* Remedies prescrib'd by the Moderns, for three Weeks time, without perceiv'ing any advantage thereby: whereupon he caus'd himself to be brought to this Town, that he might be under my Care; and being inform'd by him of what Remedies had been us'd, I thought fit to apply *Repercussives*; and in eight Days after he departed, being intirely cur'd. In order to a prudent Use of Remedies, the *Age*, and the *Constitution* of the Patient, the *Season* of the Year, and the *Nature* of the *Part* affected are duly to be considered. But I shall not further insist upon a Subject, from which I hasten.

Now as for *Abscesses* of all sorts, which have come under our Hands in this Hospital, and have been cur'd with an *Expedition* that may appear incredible, I will only say this; that judging it sufficient, to make a large opening in them, I left the rest to the sage conduct of *Nature*; not forgetting however *general* Remedies, and the *ordering* of *Diet*. But as for the dressing of the *Uleer*, I only us'd a simple *Pledget*, cover'd with the most *common* Medicines; and sometimes in case of a Cavity small *Compresses* for expelling the Humor; also a *Plaster*, with a *Bandage* sufficient to keep it on.

The great number of those, who have been treated, in this Hospital, according to this Method, and cured in a very small time, is almost wholly beyond Belief.

When the *Orifice* is not stop't up with an *Extraneous Body*, 'tis evident that the *Matter* can make no *Stay* in the Parts, but will come away without Intermiſſion ; and the Parts, that were thereby kept at some diſtance from one another, come together, and at the ſame time, do altogether expel what may there be contain'd ; and leave no empty Space, for the Collection or Abode of what is uſeleſs and inconvenient : Hence the Parts are united, *Nature* acts at her Freedom, whoſe Baſam generates Fleſh better than all the Remedies in *Pharmacy*.

I hope I may preſume, that none will think, I would have continued in the Uſe of this *Method*, for ſo long time, had I not experienc'd its deſirable Effects, in a thouſand Occaſions : and I could ſafely take my *Oath*, that never any the leaſt Accident, happened to any of thoſe, who were dress'd after this manner : Every one may believe as he thinks good of what I ſay ; but I dare aver, that I am much more careful that what I ſay ſhould be *True*, than that it ſhould be *Persuaſive*.

As for *Scrophulous Tumors*, or a *Bronchocele*, I have not found any Remedy ſo ſucceſſful as *Mercury* ; and I believe, in the Opinion I have of it, I am not ſingular : the many Experiences

ences I have had thereof, make me much to value it. He that well understands the *Cause* and *Nature* of these Evils, and withall the *Vertues* and *Uses* of the Remedy whereof I speak, will agree with me, that this only can effect a *Compleat Cure*. But all consists in the discreet Using thereof: the *best* of Remedies and the most *exquisite* Instruments, are ever dangerous, when manag'd by Surgeons that are void of Knowledge and Experience. I may possibly, one Day make known to the Publick, the Way which I have successfully us'd, to bring to a perfect Cure, a great number of such *Maladies* as I now speak of, and these the most obstinate and inveterate of their Kind.

C H A P. III.

Of a Gangrene.

A *Gangrene* is an Accident, that occasions very much Trouble in the *Hospitals* of the Army. I shall say nothing of its Causes. M. *Thevenin* has fully treated of this Matter; and M. *Causapé*, in his Book *Of Fevers*, has given a brief Discourse thereon upon different Principles. Young Surgeons may betake themselves to the reading of them, for their Instruction herein.

Wherefore

Wherefore omitting this, I say, that here we have no time to lose, but must immediately apply our selves to stop its *Progress*, and to avoid the fatal *Consequences*. When the great Vessels are thereby intirely intercepted, in a Member that may be cut off; the best Way is to come speedily to *Operation*, without attending a *Sphacelus*; for the *Gangrene* goes on so swiftly in a small time, that the sound Parts are assaulted, before ever we can well know what we are a doing.

A *Gangrene* often happens in *Gunshot Wounds*, if it is not prevented; as also in Bruises; in Wounds made by cutting, or bruising Instruments; and also after a great *Pklegmon*, or an *Erysipelas*; and sometimes by an Extremity of Cold: This last kind is very frequent about the End of Campaigns: The Remedy we us'd was *Spirit of Niter*, or *Aqua fortis*, wherein *Crude Mercury* to half the quantity is dissolv'd: with this we have easily enough stopt Mortifications in the Feet or Hands, applying over all the Extent of the *Gaegrene* a little piece of Linnen wet in this Liquor: and when this can't be had, other *Spirits* may be us'd that are near of the same Quality.

This Remedy I have found to be so gentle, and so quick in its Operation, that I never use any other, in any sort of *Gangrene*. It admirably well separates what is dead from what is alive, without scarifying or cutting; unless
when

when the Mischief lies very deep, where these violent Remedies are absolutely necessary.

Cordials and *Wine*, ought never to be omitted in such Cases, to fortify and defend the natural Heat, from an Enemy, that oftentimes assaults it in its very Principle. When the Body is plethorick, *Bleeding* and *Clysters* are no small Help. In the beginning of a *Gangrene*, to *Topical Remedies*, *Diversions* may be added, without forgetting to order the course of *Diet*, which also demands our particular Care. So soon as I have discover'd a Disposition to *Mortification*, I have sometimes us'd *Cataplasms*, and *Emplasticks* when the Inflammation would allow, to recall the *Spirits*, and to give *Nature* time and Strength, to resist and to overcome, by the force of the Heat concentrated, the Matter already endow'd with a malignant Quality, or just ready to become such ; and I have often seen such kind of Maladies, to end happily in an *Abscess*, with a laudable Concoction.

When a *Phlegmon* that follows on a Wound, is violent and Obstinate, and will not yield to *Diversions*, and *dissolving Medicines*, we must without delay scarifie the Part, so far as the *Tumor* reaches, to give an Out-let to the *Blood* that is extravasated, and often also corrupted ; and to discharge, and relieve the Part, that otherwise might be suffocated by the Fullness and Obstruction, bathing is afterward
with

with *Spirit of Wine* and *Sal armoniac* : for if we be remiss in our Care, the Enemy that is conceal'd within, is privately at Work ; and when the outward Signs of the *Gangrene* appear, all that is under the Teguments, is often found already corrupted, and in irremedible disorder.

An *Erysipelas* is yet more formidable ; for it is more sudden, and more nimble in its Operation : It is the part of a prudent Surgeon, to take heed to it in time. A Fomentation with *Spirit of Wine*, *Unguentum Egyptiacum* and *Sal armoniac*, may be us'd.

Many Authors, have describ'd a great number of Remedies, very proper in the Cure of *Gangrenes* : But in the Hospitals of the Army, there is not always the conveniency of making a Choice ; wherefore it is good to know how to use such as are simple, and easie to be found : 'tis not always the most pompous *Compositions*, that are of greatest Efficacy.

In this sort of Distempers, it is very necessary to make use of *Inward Remedies*, as well as *Topical* ones ; such as strong *Cordials*, *Venice Treacle*, *Confection of Hyacinth* and *Alkermes*, and *Alexpharmicks*, to which a little *Camphire* may be added. *Wine* ought to be numbered amongst the *Cordials* ; it is one of these, which I very frequently use in Hospitals. *Germander* taken inwardly, and apply'd outwardly upon the *Gangrene*, is a Remedy not to be dispis'd.

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A great many Remedies, very proper for a *Gangrene*, may be seen in *Etmullerus*: He has also given an account of the way us'd by the *Germans*, to separate the mortify'd from the sound Parts, which is done with the *Butter* of *Antimony*: This is the Remedy they use in the Amputation of Members, to avoid the use of the dismembring Knife, and of *Astringents* that burn and cauterize.

This Remedy might be us'd, with the same Success as the *Spirit* of *Nitre*, which I have spoken of before; there is no Difference, providing we have regard to their Nature, in using 'em: But whither the one or 'tother be us'd, to stop a *Gangrene*, a simple Digestive will afterward be sufficient to hasten the falling of the *Escar*, and finish the Cure.

C H A P. IV.

Of Ruptures.

Ruptures are very frequent amongst the *Soldiers*. The *Toil* they undergo, and their *Manner* of *Life*, do alike conduce to bring them to that miserable Condition; by reason of which there is often a necessity, to send them to Hospitals.

My Design in this Place, is only to give an account of the way I use to help *this* sort of *Distemper*: For I am convinc'd, and no Body doubts of it, that a *Truss* is the most sure and most infallible Remedy, to hinder the Falling down of the *Guts*: But, as there is no Convenience for making of them in Hospitals, so Accidents must be quickly provided for that come oftentimes all of a sudden; such as the Descent of the *Intestins* into the *Scrotum*; for the Pains are then extreamly violent, and so grievous that they resemble those of the *Passio Iliaca*.

Wherefore, in such an Occasion, I apply a Cataplasm of *OxDung*; or else when I may have it so, I use it fry'd in Oyl of *Hemp-seed*, or in that of *Violets*. This Remedy eases the Pain, by dispelling the *Wind*, and so gives Liberty to restore the *Gut* unto its Place, providing the *Intestine* is without Excrementitious Matter in it. *Astringents* of the first Rank may also be us'd as *Common Bole*, &c. mix'd with the Glair of an Egg or *Vinegar*. Some use *Emollients*, but their Operation is to slow, in a case requiring such hast.

I have often found much advantage from a Fomentation made up of *Pomgranate Flowers*, *Nut-Galls*, *Cypress Nuts*, *Pomegranate-Rind*, *Al-lom*, *Camomil* and *Melilot Flowers*, with *common Salt*, all bruised and beaten, and boil'd in *Forge-water*, or in *rough Wine*; I use it very warm

warm all together, without straining the Liquor: with this Remedy, I have restor'd Patients, who seem'd to be upon the very *Blink* of Death. Moreover the *Emplastrum pro Hernia* ought to be apply'd, upon the Dilatation of the *Peritonæum*; which without a *Truss*, the best of all Remedies, will do no great Feats.

C H A P. V.

Of Wounds.

I Have sufficiently explained my *Method*, as to what concerns *Wounds*, in the Account of Cures contain'd in my second Part. My Design is here, (for Reasons mention'd at the beginning of this Part) to entertain my Reader with a General and comprehensive *Idea* of my *Way* of Practice, that may quadrat to all the different sorts of Wounds that occur.

Perhaps this *Method* may seem to swerve a little from that of the *Ancients*, or may not agree so much with that in use amongst the most Part of the *Moderns*, as some could desire: But I would entreat those who shall read this *Treatise*, not to condemn it, before they have thorowly examin'd the Truth of the Matters of Fact, and the Reasonableness of the *Rules* therein laid down; for our usual Rashness in judging
of

of what we don't altogether understand, is often the Cause of our *Error*: However I am in good Hopes, that e're it be long this *Way* shall be acknowledged to be the Product of Experience; and its Evidence to be an infallible Mark of its *Truth*.

Moreover; I dare confidently affirm, that this *Method*, howsoever new it may appear to many, ought not to be number'd among these things that are more *curious* than *profitable*. *Reason* speaks for it: *Nature* vouches it: *Experience* confirms it; putting it beyond all doubt; and about *three thousand Wounded Persons* happily cur'd by it, may warrant any one in the Use thereof. In the first and second Part of this Work, I explain at length the *Reasons* that Justify my Practice, and support them with several *Authorities* both of the Ancients and Moderns.

If I condemn *Tents* as Instruments unprofitable and destructive, 'twas *Experience* that convinc'd me of their Mischief: and I hope, henceforward very many Surgeons shall range themselves on my Side.

If I recommend in a special Manner, a *Gentle* and *Speedy Way* of Dressing; I must herein be justify'd, by all Men of a sound Understanding: And indeed I don't question, but every reasonable Person, after he has been rightly inform'd, will sufficiently approve what I have advanc'd in this Matter.

Finally,

Finally, in asserting that the *Air* is *hurtful* to Wounds, I have said nothing but what *Hippocrates*, *Galen*, and many others were sufficiently convinc'd of. 'Tis known to all that the *cold piercing Air*, is very pernicious to our *Nature*: On this I have enlarg'd a little, in the seventh Chapter of the first Part, suitable to that little Measure of *Understanding*, wherewith I am endow'd.

I suppress frequent *Dressing*, that *Nature* may be allowed Time to act, and to restore the wounded Parts, unto their first Condition; which she can't do, when she is so often interrupted in her *Work*.

I have ever observ'd this as a general *Rule*; to dilate by making *Incisions* Gun-shot Wounds at the first *Dressing*; as also all other *penetrating* Wounds, and such as have a *narrow Orifice*: This is the true Way to keep off, and to avoid the most part of Accidents that happen in Practice; and to prevent being reproach'd, when any troublesome Symptom falls out: I sometimes use *Dilaters*, in the first *Dressing*, to hinder the Union of new *Incisions*; to keep their Brims asunder, and to leave an open Passage for Matter, or any thing else to come away, when *Nature* shall be dispos'd to expell 'em; otherwise I use them not, lest I should hinder the closing up of the Wound.

When the *Bleeding* is Obstinate, I use calcin'd *Vitriol*, *astringent* Pouders, *Powder* of the
Vine

Vine, *Styptick Waters*, &c. 'Tis only in desperate Cases that I have recourse to *Roman Vitriol*, *Aqua fortis*, and the *Actual Caутery*.

I have ever in the first Dressings, found much Advantage from *Defensives*, which I apply'd above, and sometimes below the *Wound*, to allay the *Heat* of the *Blood*, to moderate its *Activity*, and resist *Fluxions*; observing always to make them somewhat *Emplastick*.

I am always careful, to empty the lower Belly by *Clysters*; having found that the *Retaining* of the *Excrements*, is ever a mighty Hindrance to the *Good Disposition* of the Body.

When the *Bleeding* has been great, I don't take off the first Dressings, till the second or third Day after they are apply'd; that the Wounded Vessels may have time to unite: and, providing the *Season*, and the *Pain*, or other *Accidents* don't hinder, I every Day take off the Roulers during that time; and leaving only that which supports and keeps on the *Astringents*, I make *Embrocations* when needful, and renew the *Defensives*: by this means, I often avoid the *Suffocation* that may happen, if the *Astringent* and *Emplastick* Medicines are too long kept on the Parts; which by stopping up the *Pores* of the Skin, and retaining the *Vapors* that ought perpetually to pass out thereby, are the Occasion of many very grievous *Accidents* that happen to
Wounds.

Wounds. Too great a quantity of Bands and Compresses, has often the same Effect.

I use only *Pledgets* after the first, and sometimes after the second Dressing ; and continue the *Embrocations*, till the *Contusion* is dissolv'd ; which may be in five or six Days more or less, according to the Bigness and Condition thereof, or to the Nature of the *affected Part*.

When a *Phlegmon*, or an *Erysipelas*, &c. happens to a Wound, I avoid the Use of *Unctuous Things*, which are hurtful here ; employing only such Cataplasms as are proper for easing Pain, and sometimes also dissolving Medicines, which together with *Diversions*, and a proper Course of Diet, resist, and overcome these Accidents.

I find it very profitable, when I dress the Wound, to cover it with a *Linnen Cloth* wet with warm *Wine* or *Brandy*, immediately after I have taken off the Dressings : this defends, strengthens, quickens and unites the *Spirits* ; and hinders the Particles of the *Air*, and the *Effluvia* therein, to stick to the Wounds, or pass to their Bottom.

After the first Dressing is over, I never search the Wound either with my *Finger* or *Probe*, unless there is an absolute Necessity thereof. I also disallow the use of *dry Tents*, so commonly employ'd for drying up the Matter from the very Bottom of Wounds ; and
and

and generally every Thing that may irritate, or occasion *Pain*, or may oppose the Design of *Nature*, which is the Healing up of the Wound.

I don't, as some do, take up a deal of Time, in striving exactly to empty the *Wound*, of all the *Matter* that is in it; but as quickly as can be, I apply the *Dressings*, to hinder, as hath been said, the Action of the Acid Parts of the *Air*, and the *Dissipation* of the *Spirits*; that the Strength of the afflicted Parts may be preserv'd as much as possible; which is very requisite, in order to enable them to bear up against them any Evils, where-with they are assaulted on all Hands.

When, I say, in the fifth Chapter of the first Part, that the *Matter* ought not to be retain'd in Wounds; and that *Nature* would not be at such Pains to drive it out, if she could have any Advantage by its *Stay*; this is to be understood of such Matter, as is kept in by Means of *Tents*, which becomes hot, and ferments, and by its Abode acquires an evil Quality, and might be suck'd up by the Veins: for that which is Laudable, is hurtful only by Accident; being of its own Nature Balsamick, because it is ever mixed with good store of the *Natural Balsam*, or *Nutritious Juice*, which without Intermiſſion flows into the Wounded Parts. What I say, is confirm'd by that which is done, in some Places of Hol-

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land;

land ; where of the *Laudable Matter* that runs from Wounds, they make a *Balsam* that is of great Use in their Cure.

It is not at all improbable, that the *Sound Matter* that comes from Wounds may promote their *Cure*, when by the *Hand* and *Diligence* of a skilful *Artist* it is purify'd, and separated from its *Excrementitious* Parts ; for what remains, is only the *Balsam* of the *Blood*. This will be more easily conceiv'd by those that consider, that there are some learned and Ingenious *Italians*, who cure the *Bludy-Flux*, with a *Salt* drawn from the *Excrements* of the Patient ; and also such as have a *Dropsy*, with the *Salt* of the Waters, that are drawn from their *Belly*. *Etmullerus* also, very much commends the *Excrement* of the *Ears*, for curing Wounds.

All these things, contain less balsamick Juice, than the *Matter* that runs from Wounds, when it is not altered by the Heat of an essential or Symptomack *Fever*, when it has not remain'd long in the Wound, being detain'd there by *Tents*, &c. or in fine, when it is not deprav'd, by the use of *putrifying Medicines*, or others of a like sort, that destroy its natural Temperament.

M. Verdue, *Tom. 1. Pag. 440.* speaks very patly to this Purpose, when he says, that *Matter* is the *Chilous Part* of the *Blood* : Wherefore it is against all manner of Reason, that some Moderns require, that the Wound be accurately

curatly wip'd dry; seeing thereby it is depriv'd of that, which only can effect the Cure.

When I know, or am in doubt that there is some *Extraneous Body* in a Wound, which *Nature* would exclude by the *Orifice*, or that any *Splinter* is separated from a Bone; without having to do with *Tents*, I sufficiently dilate the Wound with *Prepared Sponge*, or the *Pith of Elder*, or *Gentian Root* fitted for that purpose, that a free Passage may be given to any thing that must come away: This way is understood by every Surgeon; and there is no Difficulty therein, providing one be careful to use it *Seasonably*.

I can't restrain my self from highly blaming those, who very patiently marshal up in Order, a great number of *Dossels* or *Dilaters*, of which they make three or four *Lays* in Wounds that are any thing large, observing a certain Symmetry and Proportion, which exposes to the View of Assistants a Method, no less pernicious, than contrary to *Common Sense* and *Reason*. As for the *Decency* and *Seemliness*, which adorn and set off that Way, it will be no less conspicuous, in making large Pledgets of long and pretty fine. Lint, that may at once reach over all the Extent of the Wound.

I my self have experienc'd, what a fond Opinion is commonly entertain'd of that *Cruel Method*: for the greatest part of Wounded
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Persons,

Persons, believe themselves *neglected*, if a *Hour* is not spent in *searching* their *Wound* and as much in *Applying* the *Dressings*: but *Charity* obliges us to free them from their *Error*.

When a *Wound* is deep with much *Loss* of *Substance*, I fill it only with *Pledgets* of fine *Lint*; lest leaving an empty *Space*, it should be fill'd up with *Air*: I apply them very slightly cover'd, or moistned with some *Medicine*, agreeable to the *Nature*, and *Quality* of the *Wound*: these are not so hard as *Dosses* and consequently occasion less *Pain*; and do not so much hinder the closing up of the *Wound* being not so compact as to hinder the breeding of *Flesh*; neither are they so apt as *Tents*, to be lost in the *Wound*, or fix'd in some *Corner* of its *Cavity*.

I am no less careful, to suppress *Injections* than *Tents*; having observ'd their *Effects* to be no less pernicious: for they *liquefy* and *dissolve* the *Blood*, *enlarge* the *Wound*, cause *Pain*, and make *proud Flesh* to grow.

I disallow the *Use* of *Aromatick Wines* for dressing, as also of *Fomentations*, that are frequently us'd by some, which conduce very much to the protracting of the *Cure*.

'Tis very sure that these *Parts* drink up the *Moisture*, which softens, relaxes and puffs up the *Skin*; and passing through it, fills them like *Sponges*: the *Natural Heat* of the afflicted *Part*

is thereby suffocated and extinguisht, no perfect *Concoction* can be perform'd; but all is turn'd to *Matter* and *Corruption*: and if this *Method* is long continu'd, as it too often falls out, the *Ligaments* are relax'd, and the Patient is in Danger of being lame for all the rest of his Life.

This way of Practice, is in a particular manner pernicious in *Hospitals* of the *Army*, where that which is necessary, to give Remedies all the required Qualities, is not always to be had: For Instance, how can they be kept warm, without a sufficient number of Cloathes to preserve the Patient from the Cold? Hence it is that in a Moment after Application, all the Dressings become cold and frozen, which occasions *Oedema's* very hard to be cur'd; and oftentimes also Symptoms that are yet more troublefom.

A right Course of *Diet*, is so neecessary in curing of Wounds, that without it, an infinite number of *Accidents*, cannot be prevented: But it is necessary to have respect to the *Age* and *Constitution* of the Patient, to his *Habit* of *Body*, to the *Season* of the *Year*, and the *Nature* of the *Wound*.

'Tis to be observ'd, that a very exact Diet is a mighty hindrance to the Cure of Wounds in Soldiers, who ordinarily feel more the Inconveniences of a too scanty, than those of a too plentiful Table. Wherefore I don't
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altogether deprive 'em of the use of substantial Food, unless when Necessity requires otherwise and this keeps up their *Strength*: For Broth tho' good, are not so nourishing in Hospitals as to be sufficient of themselves for Food: and yet this is no prejudice to the necessary *Diversions*. *Wine* also ought not to be kept from them, being allay'd a little, unless in some very important Cases: It resists the ill Quality and Malignity of the *Air*, which is always impure in Hospitals; and in a Word *Wine* is their *Cordial* and *Counter-poison*.

It is very necessary also, especially in Hospitals of the Army, to have Regard to the *Situation* of the wounded Part, which ought to be such, as to give liberty to the *Circulation* of the *Blood*, and a *Descent* to the *Matter*, and *Ease* to the Patient; I have known the neglect of this Point, occasion very troublesome Symptoms.

If a *Surgeon* is not so charitable, as to give Instructions, to those that attend the wounded, how to make their Beds suitable to the Quality and Nature of their Wounds; the miserable Patients, are ever in Pain by the Inconvenient Position; which is enough of it self to deprive them of the Rest, that is so necessary for 'em, and to render their Sufferings and our Cares to no purpose.

The *Head* ought to be plac'd indifferently high, and laid upon something that's soft, without

out Feathers, if it may be had, with a *Descent* to promote the Discharge of the Matter: When the *Neck* is wounded, it must be in a manner slightly supported by the Pillow: or, by Linnen folded into several Doubles, we must fill up the empty Space between the Head and Shoulders.

Wounds of the *Breast* require an *ease* and *unstrain'd* Posture, rather high than low. But in this we must have most Regard, to the Convenience of the wounded Person.

These of the *lower Belly* and *Loins*, demand almost the same Situation: To these of the *Bladder* and *Genital Parts*, an undisturb'd *Repose*, a convenient Bandage, which is a *Suspensory*, and a Position somewhat raised, are very needful.

Every Body knows that the *Arm*, when wounded, must be supported by a *Sling* that passes over the Neck; and that in Wounds and Fractures of the *Shoulder-Bone*, a Pillow is necessary to keep it almost as high as the Breast, in which posture it is most at ease: In Wounds or Fractures of the *Wrist*, *Metacarpus* and *Fingers*, we must keep the Hand extended with a piece of Board.

Wounds of the *Thighs*, require that the Member be plac'd straight, neither too high nor too low. These of the *Legs* and *Feet*, do necessarily demand that the Part be something high, that so the courser Blood may freely circulate,

culate; for otherwise, the Blood, by its Weight, might be stop'd in the Veins, and corrupted there; and thus the Circulation being suppress'd, many grievous *Accidents* would ensue. This hanging or low Position of the Legs, not being minded by many Surgeons, exceedingly conduces to render Wounds of these and the Feet very uneasy to be cur'd, and makes 'em degenerate into *Ulcers*.

It is also very necessary to *stretch* out the Legs, and keep them *straight* during the Cure; otherwise it will be difficult, to restore them to their natural Figure, after it is over, chiefly if it has been of some Continuance; as, supposing the Leg had been kept bent, when under Cure of a *complicated* or *simple* Fracture. This is what I have often observ'd, and to which young Surgeons would do well to take heed. Fractures of the *Tibia* and *Fibula*, and simple Wounds in the Legs, if any thing considerable, stand in need of a *Sole* to sustain the Foot, as well as these of the *Tarsus*, *Metatarsus*, and *Toes*.

Too *strait* Bandage, especially in *Gun-shot-wounds*, occasions troublefom *Accidents*; it hinders the Circulation, and causes frequently *Mortifications*: Wherefore I use only such as may keep on the Dressings, chiefly in the first Days: Many have been brought wounded to this Hospital, with the Parts half *Gangren'd*, by too tight Tying; for in *Gun-shot Wounds* the

the wounded Members, ever swell some more some less, whereby the Bandage, tho' but moderately strait, becomes intollerable before the next Dressing. Rest also is of no less Consequence to the Patient. Now where all these things meet together, and are rightly order'd, they are commonly of very great Advantage to the wounded.

I use *Purgatives* with great Caution, and after the time of the most dangerous Symptoms is over, beginning ever with the slightest, that only loosen, such as *Cassia* and *Manna*, &c. during which time *Clysters*, together with the use of *Prunes*, give no small Relief; *Oats* and *cleansed Barly* being easily digested, and yeilding a moderate Nourishment, qualify the *preternatural Heat* of the *Blood*, and keep open the Belly.

As for the *Topical Remedies*, which I commonly employ in Dressing of Wounds, they have nothing singular in them, which is not pretty well known to the most part of Surgeons.

I avoid as much as possible the use of *Putrifying Medicines*, and of *Powerful Suppuratives*; because they destroy the Temperament of the Parts, disunite the Particles of the *Blood*, corrupt and deprave the *Nutricious Juice*, which ought carefully to be preserv'd in a good Condition. 'Tis this which mov'd the Ancients so

often to recommend to us, to maintain the wounded Parts in their *Natural Temper*.

Hippocrates affirms, that all *Contused Wounds* ought to be brought to *Suppuration*, in order to a speedy Cure, whereby he seems to patronize and allow the use of *Putrifying Medicines*, which commonly are employ'd to bring a Wound to *Suppuration*. But me thinks, this ought not to take place in the Hospitals of the Army, where the *Air* is ordinarily infected by the *Breath*, and abode of the Sick ; and which are almost ever encompassed with the *Graves* of the Dead, whose number is but too great.

'Tis very certain, that this nearness of the *Place of Burying*, chiefly in hot Seasons, imparts to the *Air*, by the Steams that rise from thence, a Complication of Corruption and ill Qualities, that occasions *Rottenness* in Wounds, *Alteration* and great *Suppuration* ; and often causes great *Mortality*, in the Hospitals, and Places adjacent. Now according to this Maxim of that Author, *Gunshot Wounds* must be dress'd with these same Medicines, seeing they are of the number of contused ones.

I don't absolutely deny, but there may be some Occasions, wherein such may be us'd : However I may be allowed to say, with all the Respect I owe so celebrated an Author, that in *Hospitals*, we ought to shun as much as possible, *Putrefying* and *Suppurative Remedies*, and others of a *like Nature* ; even where the

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Escar may require a considerable time before its Falling : For by the seasonable ordering of *Diversions*, and the Course of *Diet*, all these Accidents are often prevented, which the delay of the Suppuration might cause : and one may without scruple use, as I have done, such Remedies as have a Vertue to resist Corruption ; as the Spirit of Wine, which *Etmullerus* prescribes even in Gunshot Wounds, and which I us'd at the first Dressing, on the Day of the Battle of *Marfeils*, without having observ'd any evil consequence of my so doing : for besides a *Good Method*, which may be call'd the Strength and chief Instrument of a Workman, it is of high concern to understand, and to know how to choose Remedies, that agree with the Temper of the Parts to which they are apply'd, and to maintain them in that State wherein God has created them : But it proves often a very difficulty Task, to satisfy *this Intention*.

As there is an admirable variety of *Constitutions*, so it would seem, that it were necessary to use different Remedies to Wounds of the same Nature, and of the same Parts, in different Subjects : The *Sex*, *Age*, and *Season* must also be considered : I have likewise observ'd in my Travels, by People of different Nations that have been under my Hands, that diverse *Climates* require *particular Applications*, in certain Circumstances, necessary to the Cure of Wounds :

Wounds: For the Constitutions of Men, depend chiefly on the Countries they inhabit; on their *Situation*, high or low, dry or moist, the *Winds* that rule, the *Food* and *Water* that they take: So that they differ among themselves, according as the *Heavens* look upon them with different *Aspects*.

But not to search any further into these things, which can't be contain'd within the Limits, prescrib'd to this little *Work*, and don't properly belong to my *Subject*; I will only say, that it is easy enough to distinguish a proper Remedy, from one that is not so: That which corrupts and depraves the *Natural Balsam*, is known by looking into the Wound; from which, if there proceeds a strong and *Stinking Vapor*; 'tis a sign that the Matter is not concocted, seeing it is thin, blackish, too plentiful, watery, and of an offensive Smell.

The *Flesh* likewise has its peculiar Signs; it is dull of feeling, and sometimes is cover'd with another *proud Flesh*: Oftentimes there is to be seen over all the Wound, a certain black or white *Filth*, which some, as I have often known, scrape or cut off at every Dressing; whereby the Wound is enlarg'd, and the Cure delay'd: Others imputing it to the vicious Temperament, and ill Disposition of the Patients Body, have recourse to Purgatives, which occasion still more new Accidents, such as *Fevers*, &c.

But

But be this as it will, 'tis certain that we ought not always to delay till the last, before we change the Remedy; our Smell and our Sight only are sufficient to direct us in this Occasion: *Hippocrates* orders a Medicine to be chang'd, when it does not what it ought, or was design'd for.

But we must not on the other Hand, fall into the contrary Extremity, of changing the *Oyntments* sometimes once, and often twice every Day; not giving time to a Remedy to act, and exert its Vertue, on the Part to which 'tis apply'd: 'Tis necessary, that the wounded Part draw as it were Nourishment from the Medecine, and therefore it must have a requisite Time, allowed it for that Purpose: it must, if I may be allowed so to speak, amalgamate with the *Nutricious Juice* of the Part; or at least, if it don't increase its Quantity, it ought to preserve it in the natural State, and when fallen therefrom, restore it again. To be capable of these Effects, it must be endow'd with a Volatil and Oyly Spirit, viscous also and temperate, as *Balsams* and *Vulneraries* are, which I have us'd with very good Success.

I have often experienc'd on many Occasions, in several Hospitals, and chiefly in this, and in very considerable Cases, that after I had in vain us'd many Remedies authoriz'd by *Custom*, the *Balsam* describ'd in the *Sacred Writings*, has
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had surprizing Effects; and that Members at the Point of being cut off, have been thereby cur'd with much Ease. This Hospital of *Bri-an-son*, might afford many Instances of the Truth hereof; but I shall content my self with the two following.

C H A P. VI.

An Observation of a very considerable Case.

A Surgeon of this Hospital, being one of those who was most employ'd in dressing the wounded, by Accident had a *Thorn* run into the *middle Finger* of his right Hand, which pierc'd the Tendon of the Muscle that bends it: his whole *Hand* and *Arm* were attack'd with very troublesome Symptoms, accompany'd with a continual Fever extreamly violent, and an unsufferable Pain.

Five or six Days past over, before I had notice of this Accident; and all the Symptoms were at the very worst: I found all things in a deplorable Condition, the *Arm* swell'd as big as the Leg, the *Hand* of a Monstrous Size, and the *Finger* as great as ones Arm; many Cavities were in the inward Part thereof, and some in the outward, from which issued a serous Matter; there was another large *Sinus* under the

the *Musculus palmaris*, with an Orifice near the Roots of the Fingers.

I straitway laid open the Finger, on the inward Part, from one End to the other, and found the *Tendon* swell'd and corrupted ; I did not enlarge the Orifices on the outward Part, nor that of the Palm, hoping that all these would he well, if I could but overcome the Accidents.

He was *Let Blood*, and had a *Clyster* given him, tho' somewhat too late ; he observ'd an exact Course of *Diet*, and was drest with the Balsam of *Arcaus*. On the Morrow when I took off the Dressings, I was surpriz'd, as I had been the Day preceeding, with a Vapor of an intollerable Smell ; the Lips of the Wound were turned outward, which made me despair of a Cure, and judge it would be necessary to cut off the Hand : The *Matter* remain'd undigested, the *Fever*, the *Pain*, and the *Swelling* continu'd as before : he was drest in the same manner as the Day before, with addition only of a little *Spirit of Wine*. The *Bleeding* was repeated, and also the *Clyster*.

The Day following, the Wound was in the same Condition, save that the Corruption appear'd to encrease : We were of Opinion, that nothing but *Amputation* could save his Life. But for as much as Art and Reason dictate, that the preservation of the Members ought to be endeavour'd so much as possible ;
and

and as we are oblig'd in Conscience to try all Remedies before we come to that Extremity: I resolv'd, forthwith, to change the Medicines; judging rightly that what had been us'd, might have occasion'd, this depravation of the Salts; whence it was to be fear'd, a total Corruption of the *Nutricious Juice* might follow.

Wherefore now I us'd the *Balsam* of the *Scriptures*, mixt with a third Part of that of *Arcaus*, in this I wetted the Pledgets, which I apply'd very warm over all the Wound, and upon the *Sinusses*: I pour'd some of it also into the *Sinus* of the *Musculus palmaris*, and upon it I put a Plaister of *Dipalma* dissolv'd in *Oil* of *Roses* and good *Vinegar*.

On the next Day after this, we found all things much chang'd to the better: The *Fever* and *Pain* were lessen'd, and there was nothing so ill a *Smell* as before.

I question not, but the *Fever* is a Symptom troublesom enough, and able to cause all these Effects; and that by the Motion it excites in the Blood, it separates saline and sulphureous Juices, that by irritating the Fibers may occasion that turning out of the Lips of the Wound, their Swelling, and that insupportable Smell: But it can't, on the other side, be deny'd, that outward Remedies conduce much, to procure that Fermentation and Corruption in the wounded Part, when they are such as putrify;
because

because they dissolve the Blood and other Liquors, causing *Irritations*, *Corruptions*, and great *Suppurations*; and destroy the Temperament of the Parts, to which they are apply'd. Whereas when *Balsamick*, and *Spirituos* Medicines are us'd, they produce quite contrary Effects: For by allaying the Sharpness of the Humors, and making the Blood fluid, they resist Corruption, dry up the Moisture, and in the Place where they are apply'd, abate the Commotion of the Humors, caus'd by the *Fever*.

In fine, whither it was by this, or any other Way, 'tis certain that the *Change* of the Medicine here, produc'd a notable Alteration on our Patient: for tho' the Fever appear'd but very little abated, by all that I had formerly done; the very next Day after this the Lips begun to come nearer together, the Pain and Defluxion ceas'd; and which is most of all, the ill Smell was quite evanish't; so that in five or six Days he was past all Danger, and the Cure was compleated in a little time after.

M. Le Clerk, Physician to the King, in his *Compleat Surgery*, commends much the Samaritan Balsam, to which we have given the Title of *The Balsam of the Holy Scriptures*: and the Approbation of such a Man is sufficient to justify its Use. I thought it not unfit likewise here to subjoyn the Description of another compound

compound *Samaritan Balsam* of an admirable Vertue. It is made up of equal Parts of *Spanish Wine* and *Oyl of Roses*, to each Pound of which Mixture two Ounces of *Sugar-candy*, and as much *Honey of Violets* must be added, and all boil'd on a gentle Fire, and skim'd till the Wine is consum'd. This may be call'd the *Balsam of Balsams*, or the *Compound Samaritan Balsam*.

C H A P. VII.

An Observation of another Case.

M. Vert the Younger, an Ensign of the Company of *M. de Beauvet*, Lieutenant of the King at *Brianson*, and Commander of the Second Battalion of *Sault*, had no less Reason to applaud my *Method*, and the good Effects of my *Remedy*, than him we discours'd of in the preceding Chapter.

He was wounded with a Sword, at *Pragelas*, in the outward Part of the left *Arm*, near the bending of the *Elbow*. The Wound was at first neglected, being not well dress'd: for without dilating it in any Manner, a *Tent* was thrust into it as long as it could possibly receive; which occasion'd such frightful Accidents, that the Patient thought of nothing but

but losing both his *Arm* and his *Life*. In the inward part of the *Arm*, opposite to the *Wound*, *Matter* was collected, and *Abcesses* form'd; which oblig'd him to consult the principal *Surgeons* of the *Regiments*, who thought it convenient, to make an *Opening* in that *Part*, which accordingly was done. By the large and deep *Incisions* that were made, the *Artery* was opened; so that they were oblig'd to use the *Actual Cautery* to stop the *Bleeding*: By this means the *Wound* was enlarg'd, and the *Pain* and the *Accidents* increas'd.

The first *Wound*, was still dress'd, as before, with *Tents*: but the *Wounded Person* having kept his *Bed* for fifty *Days*, and his *Wounds* being still in a very wretched *Condition*, he was advis'd by the abovemention'd *Gentleman M. de Beauvet*, to cause himself be transported to *Briançon*, to try if there he might find any *Help*. He was committed to my *Care*, and I found the inward or lower *Wound*, the length of a large *Span*, and four or five *Fingers* breadth wide: The *Artery* and *Tendons* were uncover'd, the ancient or outward *Wound*, whose *Orifice* was very strait, had in it a pretty long *Tent*, which shut up the passage of three or four *Sinusses*, that took up all the *Joynt*.

The *Arm* and *Hand* were *Oedematous*, being much swell'd, and painful; I began by making an *Incision* in the *Wound* on the outward *Part*, whereby I discovered the *Orifices*
of

of the *Siunsses*, into which I dropt a little of *our Balsam*, mixt as I formerly said, with some of that of *Arcæus*.

The large and lower Wound was dress'd with the same Remedy: We us'd expulsive *Cmpresses*, to press together the Sides of the Cavities, which we kept on with a proper Bandage: Moreover we laid aside the *Aromatick Wines* that had been before us'd upon all the Part, to its great Detriment.

Three Days after it had been dress'd in this Fashion, the most Part of the Accidents disappear'd: he begun to rise up from his Bed, to take his Victuals, and to gather Strength; all the deep *Cavities* were fill'd up; the *Artery*, the *Nerve*, and the *Tendons* were cover'd over; the *Pain*, the *Fluxion* and the *Oedematous Swelling* were 'quite gone; and by this powerful Incarnative the Cure was compleated in a Fortnight, with the assistance of a little *Unguentum Apostolorum*, wherewith we sometimes use to consume the *Flesh*: After this he mounted his Horse, and went for the *Air* into his own Country.

This I may confidently affirm, as a certain Truth, that when the *Balsam* we speak of is genuin and unsophisticated, it may serve at the same time both for *Food* and *Medicine*, being made up only of *sweet Oyl* and *Wine*: And that it may be us'd not only for curing Wounds of the *Mouth*, of the *Tongue*, of the *Gullet*,

let and *Wind-pipe*, and generally of all the *Breast*; but likewise in obstinate *Dysenteries*, in *Relaxations* of the *Fibers* of the *Ventricle*, in *Ulcers* thereof, and in these of the *Guts*, and of all the *lower Belly*. For if we consider its *Nature*, we shall find it of a friendly *Quality*, and extremely agreeable to our *Constitution*; being compounded of such things as serve us daily for *Food*. *Sweet Oyl* softens, loosens, sweetens and penetrates; and when it is boil'd with *Wine*, which it devours as it were and consumes, retaining with its self all the *Vertue* thereof, it is enabled to perform all these *Operations* with much more *Ease*: It cuts, dissolves, strengthens, restores the *Spirits*, breeds *Flesh*, and is *Astringent*; all which our *Balsam* performs, being indow'd with the most useful *Vertues* of these *Remedies*, and containing a *Volatil*, *Oyly*, and *Temperate Salt*, that is *Astringent* and *Sarcotick*: And if a little *Sugar* is boil'd with it, it becomes yet more excellent, is more *Vulnerary* and *Balsamick*, has no *Acrimony*, and is without either *Smell* or *Tast*.

Had this *Remedy*, how simple soever it may appear, produc'd such *Effects*, in the *Hands* of any other but my self; they wou'd without question have made a great *Secret* of its *Composition*: and tho' this had been known to many, yet they wou'd never have publish'd its *Vertues*.

It were greatly to be wish'd, that there were only *one Remedy*, which might be able to answer all Intentions; so we shou'd not be always oblig'd to have in the Patients Chamber, a whole *Apothecary's Shop*; which is often no less prjudicial to the *Purse*, than offensive to the *Smell*.

Being about six Years ago at *Turin*, I cur'd a Gentleman of an inveterate Ulcer, that encompass'd all the Bottom of the *Uvula*: Many Surgeons had to no purpose us'd a great many Remedies: And I in like manner after the use of some more with no better Success, bethought my self at length of my *Anodin Balsam*: In this I dipt a Linnen Rag ty'd to the end of a Probe, and therewith touch'd the Ulcer twice a Day: By this Means, as I solemnly protest, in twelve or fifteen Days, the Ulcer was compleatly cur'd.

This *Remedy*, how ancient soever it is, will appear new to many. However 'tis certain that *Hippocrates* in complicated Fractures, us'd little Linnen Rags dipt in *Oyl* and *Wine* mixt together, to allay the *Pain*, and prevent *Convulsions*, which is a *Precedent* sufficient to invite our Imitation.

It hath been the Policy of almost all who ever wrote of Medicine, still to reserve something undiscover'd to themselves. I could name a great number of Authors, who have published the Vertues of certain Remedies, whereof

whereof they have never given the *Composition*; or if they have, it has been in such *Ambiguous* and *Ænigmatical Terms*, that it is hard to understand any thing of it. And indeed I must acknowledge that a Remedy, when it becomes common, how good soever it may be, loses much of its Esteem.

I have formerly said, that the Variety of *Constitutions*, and Diversity of wounded *Parts*, require sometimes a Difference of *Remedies*; to this we must have all due Regard: For it often falls out, that even the most *excellent Medicines*, are not capable to answer all our Expectations; especially when the *Patient* is of an ill Constitution, and the *Distemper* obstinate, and troublesome.

However it is not good, to put too much Confidence in this *single Composition*, as if it were an Universal Remedy, if at any Time the Success prove not answerable to our Desires: I own that I have been oblig'd my self in such Cases, to boil in our *Balsam*, the *Greater Conjound*, *Bugle*, *Sanicle*, some *Lavender*, *Clary*, *St. John's-Wort*, and the *Lesser Moon-Wort*, which is a powerful *Vulnerary*, and very common in these *Parts*; and afterwards to give it some Consistence, with about a third Part of the *Balsam of Arcæus*: This *Composition*, has done surprising things; it hath consumed and remov'd *Fungusses*, from *Feet* that had been intirely *Frozen*, and also from

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Amputations, which had withstood all other Remedies : It procures a good and moderate *Suppuration*, eases the *Pain* of *Wounds* in the *Nerves*, allays and resolves powerfully, fills up with *Flesh* in a small time, in fine, an *Embrocation* therewith, cures speedily *Bruises* of all sorts.

Altho' I have *these Remedies* in great Esteem, and am confirm'd in my Opinion of their Excellency by a multitude of *Experiences* that I have had ; Yet I don't pretend to lay aside the *Oyntments*, *Cerats*, and *Plasters* of Pharmacy ; which may be of very great use, and are every Day employ'd with Success, by very skillful Persons in curing Wounds.

This only I will affirm, by the way ; that the most Part of *Oyntments* have a strong smell, that is not only disagreeable to the Wounded ; but is also no less *hurtful* to the Wounds, than offensive to the Smell ; and very much conduces to render them *putrid*, *fætid* and *Virulent*.

There are also several Places, where they very unadvisedly use *Corrosive Sublimat*, *Arsenic*, and other things of a like Nature, in the Cure of Wounds, not foreseeing their fatal Effects. Nevertheless we can't here be too cautious : All the Parts of our Body, are made up of *Veins*, *Arteries*, *Nerves*, *Lymphatick Vessels* and *Glands*, that are easily affected by whatever touches them, and that by means of
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the *Circulation* convey to the *large Vessels*, and the *Original* of the *Nerves*, the good or ill Qualities that have been imparted to 'em. The *Contagion*, that is communicated to the *Sheets* of a *Bed*, wherein one that has the *Pox* or *Itch* has lain for a *Night* only, will imprint its Characters on a sound Person, that after lyes in 'em; tho' the impure Matter touch only the *Scarf-skin*, and is to Appearance much less active than *Arsenic* or *Sublimat*.

The unfaithfulness us'd, in making up certain *Compositions*, which I have experienc'd on some Occasions, hath oblig'd me, to resolve to make up my self, some that are more simple, and much more Effectual.

Etmullerus in his *Medicinal Surgery*, and many others before him, have complain'd of the prodigious number of Medicines used in Practice; and of the great many *Plaisters*, *Oyntments*, *Cerats*, and a thousand other useless things, good for nothing, but to perplex the Mind of young Surgeons. That great *Magazine* of *Pharmacy*, might be reduc'd to much narrower Bounds. *Experience* has convinc'd me of the truth of this; and there are at this time many Persons, very expert in Chirurgical Practice, that are herein of my Opinion; some of whom think, that one *Remedy only* may answer all: It were well if such a *Method* might be establisht, for the good of the Wounded, and the Conveniency of Surgery.

But I am inclin'd to think, that no Man has yet gain'd that *Point* ; which is extremely hard to be attain'd, because of the *Diversity* of the *Parts* of which we are compos'd, and the *Variety* of *Constitutions* in different *Persons*.

'Tis this Consideration, that hinders me to give Credit, to that *universal Remedy* which a certain *Modern*, otherwise a very able Surgeon, and at some distance from these *Parts*, hath endeavour'd to establish. But if I am not altogether of this last Opinion, I am yet much further from that of the *Ancients*, who have left us such a *Numerous List* of Remedies, as can't be either committed to the *Memory*, or retain'd therein. A great deal of *Study*, and diligent *Application* is necessarily requir'd, in order to know their *Vertues* and *Properties* : For to make the right use of a *Medicine*, we must know its *Nature* and *Effects*, not abandoning the Success to uncertain Chance, and the Fidelity of another, as is often done.

Moreover, it is very hard to believe, that all these mighty *Compositions*, are answerable in their *Effects*, to the Expectations had of them : the *numerous* and *differing* Ingredients do oppose, alter, and destroy one another. The most Simple Things are most agreeable, and sympathize most with our Nature.

I could never yet learn, that *Solomon*, who had an *Universal Knowledge* of all things, left behind him for the Cure of *Wounds*, *Composi-*

tions

tions so perplexing, and stuff'd with such a number of *Ingredients*, as these, which some use at this Day: In his time, *two* or *three* *Simples*, suffic'd to make a *Balsam*, which was nothing inferiour to many others, that are now cry'd up as *Infallible Remedies*.

Balsams are recommended, in the curing of *Wounds*, by the most Part of the *Ancients*, and almost all the *Moderns*, contrary to the Opinion of some that Practise Surgery, Enemies to Antiquity; who therein act, as the *Quacks* do, contrary to all manner of *Reason*: But an undiscreeet *Passion*, ought never to prevail over that, which is justified and supported by *Experience*.

Tho' I don't approve of Medicines, made up of numerous *Ingredients*, yet I have often us'd the *Styptic Plaister* of *Crollius*; which, tho' it may be accounted of this number, ought not at all to be laid aside: For when it is faithfully made up, it hath *Vertues* too effectual to be neglected, and not sought after. When I have a Mind to give it a softer Consistence, and reduce it to the form of an Oyntment, that I may make use of it in dressing of Wounds, I melt it with the *Balsam* which I have describ'd; and sometimes with the *Oyl* of *St. John's Wort*, prepar'd with *Gum-Elemy*.

It will answer all the Expectations, may be had of it, in curing Wounds and Ulcers: It allays Pain, cleanses, and breeds Flesh: those

who will give themselves the trouble to examine its *Composition*, and *Ingredients*, will agree with me, that 'tis not impossible, but it may have all these *Vertues*.

I have sometimes us'd, and also in this Hospital, a *Red Balsam* made with an Ounce of *Red Saunders*, and *White Wax*; two Ounces of *Venice Turpentine*, *Oyl of Roses*, and *Rose-water*; and a Dram of *Sal armoniac*; all mixt together, and hastily boil'd, and kept for use: It resists *Putrefaction*, and lessens *Suppuration*.

The *Simple digestiv*, is a Remedy that commonly use, to bring away the Escar in Gun-shot Wounds; mixing always therewith a little of the *Yolk of an Egg*, and some *Spirit of Wine*: I renew it every Day, because it soon corrupts, by Reason of the *Yolk of the Egg*.

Turpentine is a simple Balsam, which is excellent for curing of Wounds: The Country People about *Brianson*, who gather a great quantity thereof from the Wood of the *Lar Tree*, use nothing else, but this *Single Remedy* without any mixture, for the Cure of the Wounds: Certain it is, that they who are accusom'd to mix with it, a great number of *Ingredients*, and *Catagmatick Powders*, spoil its *Vertue*, and can expect nothing from it, but bad Success.

Arceus his *Balsam* us'd in so many Places is not to be despis'd when rightly compos'd. But 'tis convenient to remark, that it agre

not to all *Distempers*, nor all *Parts* of the Body, as was observ'd in the first Remark of this third Part: Which I have also experienc'd since, in many other Occasions.

Basilicon, is one of the most common Oyntments, and most us'd: I sometimes imploy it to receive the Pouders, that I think necessary, either to *Irritate*, or procure *Suppuration* when I judge it convenient: Otherwise I don't much deal with it.

It sometimes falls out, by the use of *Sarco-tick Balsams*, that the Flesh grows so fast, as to oblige us to consume it; and also the Orifices of the *Lymphatick Vessels*, oftentimes raise up certain *Protuberances*, that together with the superfluous Flesh, forms as it were a resemblance of *Mushrooms*, which some endeavour to remove with *Cathereticks*, but to no purpose.

I have observ'd, that to touch the *Excrecence* all over, with a Dissolution of the *Caustick Stone*, is much better, than any other means, that can be us'd, for this Intention; providing the Application be renewed, so oft as is needful. I have in eight or ten Days, consumed *Mushrooms* as big as my Fist; which the ordinary Powders cou'd not have done in two Months. It may be seen, in several Places of the second Part of this Book, that I have us'd it, with a quick and happy Success, when there was Occasion to take off the *Callosity*, happening to Wounds, in order to procure a Reuni-

on: and when these kind of *Protuberances* have but a dull Sense, I don't scruple to sprinkle upon them, the foresaid *Caustick* pulveriz'd, or to apply *Pledgets* dipt in a *Dissolution* thereof, till I have procur'd such Smoothness, as is requisite in order to a laudable *Cicatrix*, and have restored the Feeling of the Part.

When I only intended to bring to an Equality, the luxuriant Flesh; and procure a firm and handsom Scar, I have us'd with good Success *Unguentum Apostolorum*, mix'd with a little *Unguentum Egyptiacum*: This destroys proud Flesh, and is an excellent Medicine for *Ulcers*, to be apply'd before the use of powerful *Sarcoticks*. For it quickens the Flesh, consumes superfluous Moisture, and resists *Putrefaction*.

I have always mightily approv'd, the use of the *Spirit of Wine*, and have often caus'd dress Wounds of the Extremities, with this Remedy only: 'Tis true it delays *Suppuration*, and protracts, the coming away of the *Slough* in *Gunshot Wounds*; but it powerfully resists *Putrefaction*, corroborates and quickens, hinders *Excessive Suppuration*, and the *Dissolution* of the *Nerves*, to which *putrifying Medicines* are very hurtful.

The *Emplastrum Tripharmacum Juberti*, made of *Litharge*, *Oyl*, and *Vinegar*, to which I add a little scrap'd Lint, is admirably good to digest a Wound, and bring it to *Suppuration*, without occasioning great *Putrefaction*: It mightily dissolves

dissolves *Contusions*, and its use is of great benefit.

It is certainly very convenient, that a Surgeon have some *peculiar Remedy*, the Vertues whereof he is well acquainted with, to which he may have recourse in obstinate and troublesome Accidents, that sometimes follow upon Wounds, and will not yield to the *Common Remedies*. It is often also expedient to change the Medicines, as I have formerly said, and not always to be confin'd to one thing: For the Fondness one may have for a *Balsam*, or an *Oyntment*, that, possibly, may have done very good Service on many Occasions, ought not to prevail so, as to make us employ it in all Times and Places: The *best* and most *Approv'd Remedies*, have not always the same Effects, or the same Success: For certain it is that not meeting with the same *Constitution* in all Persons, 'tis impossible they can have the same *Operations*.

REFLECTION.

I have often observ'd, and it daily falls out, that *Quacks*, who have neither *Skill* nor *Experience*, have succeeded in the Curing several Distempers, after they were given over by *Profess'd Surgeons*, who had bestow'd much time, and us'd many Remedies to no purpose: But I don't at all think it strange; for Those, leave Nature to her Self, in such Occasions; and 'tis she only that works these Miracles, that are

unjustly attributed to them, and give such Reputation to their Remedies.

Not, but that acting without any Rule, they commit very *gross Blunders*; being unable, with all their *Balsams*, to correct, overcome, yea or foresee the Accidents, that often follow upon Wounds: For all their Skill, extends no further, than to the making up of their Remedies; and that which can't be cur'd by these, passes with them for incurable. It is not so with regular Surgeons; they know the Causes of Accidents, and apply thereto the necessary Remedies, without abandoning the wretched Patient to his ill Fate.

It is indeed a notable Shame, that a wounded Person should go from under their Hands, to be cur'd by a *Quack*, a *Clown*, or a *simple Woman*. I have known, in several Places such, who by the Sale of their Remedies, have acquir'd great Reputation; whether by the Confidence, that wounded People had, of the Vertue of their *Balsams*; or for a Reason that appear'd very convincing; to wit, that tho' they neither us'd *Tents* nor *Dilators*, yea in very expresse terms discharg'd them, yet they often succeeded in their Cures, to the Disgrace of Surgery. However, it must needs be, that the Inventers of these *Balsams*, did discover some Inconveniencies in the use of *Tents*, seeing they have altogether forbidden to employ 'em: Now, I suppose it will easily be believ'd, that

that these Men or Women, who are employ-
ed in selling them, are not the first Authors;
and that these who first us'd 'em, were not al-
together destitute of Knowledge.

Diapalma, is one of the Plaisters, most com-
monly us'd in Hospitals of the Army: When
it is rightly made up, and dissolved, as was said
before, it is not to be despis'd: And I add to
it, when the Case requires, a little of *Empla-*
strum de Betonica.

Emplastrum divinum, *Manus Dei*, *Gratia Dei*,
&c. are *Plaisters* of a singular Vertue; but
very seldom to be found made up, with all the
requisite Fidelity.

I have nothing in particular to say, concern-
ing *Cataplasms*, according to the ordinary
Method: It belongs to the prudent *Surgeon*,
to give them what Form and Qualities, he
thinks fittest for the present Occasion.

I have often found much more Advantage,
from the Use of *Emplastrum Tripharmacum* spo-
ken of before, and *Diapalma dissolv'd*, which
don't so much clog the Parts, to which they
are apply'd, nor at all hinder Transpiration.
Anodine Cataplasms, such as that of the *Crum*
of Bread, and others of that Nature, are very
useful in great *Inflammations* of Wounds, after
the necessary *Diversions* have been perform'd;
they allay the Heat of the Blood, extinguish
the Acrimony of *Salts*, and relax the *Skin*.
Unguentum Santalinum may also be us'd to good

Purpose : And when the Pain is partly remov'd, I use *Dissolving Medicines*, which at first would have encreas'd the *Inflammation* and *Fermentation*.

Before I put an end to this Discourse, I will remark, that it is very requisite for a Surgeon of a Field-Hospital, or of an Army, who may sometimes be shut up in a besieged Place, ill furnish'd with Medicines for the use of the Wounded, to understand, how to make up simple, and easy Remedies, with few Things, such as those before mention'd for *Wounds*, and these of which I shall afterwards speak for *Ulcers*; which in time of need may serve for all: *Brandy*, which is the ordinary Refuge, in want of other Remedies, may also be lacking. It is the part of a prudent Surgeon wisely to provide for this necessity, and to accommodate himself to the time, by dressing the wounded *Seldom*, and according to our *Method*: Thus fewer Medicines shall be us'd, a little shall go a great Way, and every one shall have Reason to be satisfy'd.

A great number of *Abscesses*, *Wounds*, *Ulcers* and *Fractures* of all sorts, that have been under our Hands, in this Hospital, have been cured according to this *Method*; wherein there is nothing but what is *Gentle* and *Easy*. All the *Amputations* that we have perform'd, were dress'd only once in two or three Days, during the whole time of the Cure, with our simple

ple Remedies; and that with very good *Success*. Those who have been so happy, as to avoid the malignant Influence, of the Contagious Steams, that have so long prevail'd in the *Air*, have experienc'd the Comfortableness of this *Method*, by the suddenness of their Cure, compleated without any *Exfoliation* of the Extremities of the Bones: Which infallibly had followed on *Frequent Dressings*.

I commonly use a *Button of Vitriol*, to cauterize the Vessels, and stop the *Bleeding*, which I ever found successful; neither did the Flux of Blood ever return. The two *Stitches* with a *Needle*, made cross-wise upon the *Vein* or *Artery*, are very sure; this is a common Way, which I have sometimes, and yet do follow: But the Falling of that *Suture*, is sometimes tedious, that it exhausts the Patience, both of the wounded Person, and the Surgeon; notwithstanding its use is very safe: For the *Bleeding* is less to be fear'd this Way, which is quick and gentle, than any other. The *actual Caутery* is now out of use, unless it be in *Amputations* perform'd on the *Dead*.

Tho' in the Cures of the *Penetrating Wounds* of the *Thorax*, spoken of in my second Part, I was not oblig'd to perform the *Operation* of the *Empyema*; yet I have had Occasion to use it, on many other wounded Persons, since I embrac'd this *Method*: For take what Way, or what Care you will, it is oftentimes absolutely necessary:

necessary. When the Cavity of the Breast is full of Blood, and the Orifice of the Wound high, it is not then safe, to attempt to empty it, by the way of *Urine*, which might be too slow, and is too uncertain; but we must without delay fall about the *Operation*.

I will not here, describe the Manner of performing this, or other *Operations*. *M. Verduc*, and *M. Charriere*, have lately afforded sufficient Means of Instruction in this Affair. This I will only say on the Subject in hand, that this *Operation*, ought always to be perform'd on that Side, where the Effusion of the Blood is; and if it is found to have been on both Sides, and one *Opening* does not give the Ease that is expected, tho' the *extravasated Blood* is discharg'd; we must make an *Opening* also on the other Side, after the first is carefully clos'd up, and the Patient has had some time allow'd, to recover his Strength. Sometimes I am oblig'd to use *Tents* for the first Day, lest the Division of the *Pleura*, that was but newly made, should unite again; and so there would be a necessity of a new *Operation* the next Day, to let out that *Blood*, which being coagulated, could not at first be brought away, and can hardly be evacuated by any other Means. As for these *Openings* made in the Body by *Bullets*, in Gunshot Wounds, there is no need of *Tents* to keep them open, for they cannot be clos'd up, till the *Escar* is separated.

I have already said, that in *Openings* which I make to evacuate the *Collections* of Matter, or *Abscesses* in the *Thorax*, occasion'd by a *Pleurisy* or *Peripneumonia*, I use *Tents* without a *Point* in the first Days, to keep the *Matter* from coming out all at once : Otherwise the Place that was possess'd by the *Matter*, wou'd soon be fill'd with *Air* ; which, being ever colder than the inward Parts of the Body, might occasion *Coagulations*, *Suffocations*, and *Swoonings*. Moreover, when a great deal of *Blood* is extravasated, it must also be let out by Degrees. Now in such Occasions *Tents* are necessary : But these being once over, I lay them aside for good and all ; that a free Passage may be given to the *Matter*, that the Generation of a *Callosity*, about the Sides of the *Opening*, may be prevented, and that nothing may be left to hinder the Reunion.

By this *Method*, the wretched Patient is delivered from a great deal of *Trouble*, *Pain* and *Vexation* ; being enabled thereby to enjoy a *Repose*, which otherwise he could never have expected : And by seeing him thus from *Pain*, what innumerable Accidents are avoided ?

Had not *Charity* and *Patience* prevail'd in this Place, and restrain'd us from cutting off, without further delay, Members, that were only gangren'd by an Extremity of Cold, as other Surgeons of Hospitals have done ; this of
Briançon,

Brianſon, wou'd have been full of Invalids. For about the End of the Campaign, in the Years 1692, and 1693. a great number of ſick Perſons were brought thither from *Pignerol* and *Oulx*, who in paſſing the Mountain *Genèvre*, were in ſuch manner ſeiz'd and penetrated with the Cold, in the Extremities of the Body, that a total *Loſs* of Senſe, and alſo a *Gangrene* did enſue; the moſt part of whom, notwithstanding, were cur'd without *Amputation*; thoſe only excepted, that had been before, worn out with long *Sickneſs*.

C H A P. VIII.

Of Gunſhot Wounds.

SEING *Wounds* are the Principal Subject of this little Treatiſe, it was not fitting that thoſe inflicted by *Fire-Arms* ſhould here be forgotten. Wherefore, I ſhall ſay ſomething of them in this Chapter.

Gun-shot Wounds are acknowledged by all to be very troubleſome, becauſe of the *Tearing* and of the *Diſordering* the *Fleſh*, occaſion'd by the *Bullet*, the *Stop* put to the *Circulation* ſo far as they reach, the *Havock* that attends them, and the *Obſtructions* they occaſion; all which are but too too able to produce very grievous Accidents.

dents. *Fluxions*, *Mortifications*, and *Gangrenes* are here very much to be feared; to prevent which, I at first give Breathing to the Wound with pretty large and deep *Incisions*, according as the Nature of the Part, and bigness of the Wound do require. I do my utmost to draw out the *Extraneous Bodies*, if there are any, putting the Wounded Person in the same *Posture* wherein he received the Wound: Afterwards I dress it according to my Method, and seasonably perform the requisite *Diversions*. A *Flux of Blood*, is almost never to be fear'd till the *Escar* be fallen, unless some great Vessel be wounded.

Nevertheless, I can truly affirm, that there never happened any Flux of Blood in Gunshot Wounds, since I laid aside the use of *Tents*: for according as the *Escar* is dissolv'd and comes away, a *new Flesh* is bred without any hindrance, and covers the Wounded Vessels, which can't be when it is prest by *Tents*. This is a Truth so evident, that I hope no Man will call it in Question.

Diet ought always to be rightly order'd: and if notwithstanding all our Care and Precaution, dangerous Symptoms do follow, we must endeavour to ease and relieve the Part, by making many *Scarifications* thereon, in order to give a Vent to the *extravasated Blood*, and to hinder its *Stay* and *Fermentation*. But seeing the most part of the Accidents that
happen,

happen, are more or less troublesome, according to the different Bigness of the *Contusion*; I do what I can to dissolve it, as soon as possible, and to restore the *Humours* to their usual Motion: For according to the Definition we have laid down in our first Part, *A Contusion is a Disorder of the Fibers and little Vessels, that changes the Regularity and Situation of the Pores*: but this is often accompany'd with an *Effusion*, or Extravasating of *Blood*, which pressing upon the *Vessels*, hinders the Course and Motion of the *Humors* and *Spirits*. The *Accidents* that follow, in this last Case, are much more troublesome; wherefore, without expecting the Effects of dissolving Medicines, I forthwith have recourse to *Scarification*; for *Mortifications* often times surprize of a sudden: however, seeing things come not always to this Pass, I sometimes use *Dissolving Medicines*.

We have known, a very warm *Embrocation* with *Oyl of Roses*, to which was added a little of that of *Turpentine* and some *Spirit of Wine*, produce exceeding good Effects: it begins the *Dissolution*, relaxes the *Skin*, and disposes the Part, to receive afterwards the Impression of the Plaisters; such as the *Triparmacum Juberti*, *Diapalma* dissolv'd as we have ordered, fresh *Cow-dung* fry'd, with *Volatil Salts*, as also that of other Animals: the *Roots of Briony* infus'd in *Spirit of Wine* are in this Case very proper.

Dissolv-

Dissolving Cataplasms are sometimes very reasonable, providing they be not too empla-
stick : and if in spite of all our Care a *Gan-
grene* should follow, we must use these Reme-
dies which were describ'd under that Head.
But this Accident never yet fell out in any of
these Wounds, whereof we had the first Dref-
sing ; and I can aver, that tho' *simple Gun-shot
Wounds*, are dress'd in this Hospital as *Excoria-
tions* only, yet are they always cur'd with a
surprizing Quickness : Nevertheless we per-
form all the necessary Diversions. The Re-
medies we us'd may be seen in the Relation of
the Cures.

CHAP. IX.

Of Burns.

THE *Accidents* occasion'd by *Gun-powder*,
might afford us Subject of much Dis-
course upon *Burn* ; But I design only to
speak a Word or two thereof, that I may
thence have Occasion, to point forth the Re-
medies I use in their Cure.

The *Tallow* of which they make Candles,
melted with the *Oyl* of *Walnuts* to the Consi-
stence of an Oyntment ; will answer to all the
Intentions propos'd in this Matter. I have
not found any thing either so effectual, or so
easie :

ease : it will terminate the *Empyeme*, and cures generally all sorts of *Burns* whatever, in very short time : In fine, this is the Remedy which we ordinarily use. *Benjamin*, *Unguentum Populeum*, and the *Yolks of Eggs*, may be us'd when this can't be had. There are but very few Surgeons, who have not always some *particular Remedy* for *Burnings*, some more some less effectual. *Etmullerus*, and other Authors, have given a great number of very good ones : and *M. Verduc* in his *Pathology*, explains their *Nature* and their *Differences*, in a very clear and unintelligible way.

A little time after the Declaration of War, an Accident happen'd in the Valleys of *Luserne*, which afforded us many frightful Spectacles. The Guard-house of the Fort of *Tour*, call'd *St. Maries*, fell down upon about thirty Soldiers, as they were warming themselves about a great Fire ; of whom twenty, or thereabouts, were buried with the Ruines, in the Chimney by the Fire. A good deal of Time was spent before they could clear away the Stones and the Rubbish, and get out these poor wretched Creatures. Some were found dead, and roasted ; others were brought into the Hospital of *Luserne*. A Plaister as big as a Bed-sheet, was scarcely sufficient to dress them. Two or three dy'd ; and five or six were cur'd by the assistance of *Cordials*, *Diaphoreticks*, and *absorbing*

bing Medicines, taken inwardly to facilitate the opening of Obstructions ; while outwardly, the most proper Oyntments, were us'd to allay the Pain, and dissipate the corrupt Matter, to which I caus'd add a little *Camphire* and some Yolks of Eggs mixt together : To conclude, after very frightful Suppurations, the Cure was compleated ; but they were for the most part, like so many Serpents, all oblig'd to change their Skin.

CHAP. X.

Of Ulcers.

E*Tmullerus* is of Opinion, that the Cause of Ulcers, proceeds from an *Acid*, whereby the immediate Nourishment, distributed to the Part, is corrupted, and losing its Oyly and Balsamick Nature, becomes sour, and altogether unfriendly to the Part, that it ought to nourish, and so considerably encreases the *acid Ferment*, and augments its Activity.

According to this Definition, a *Topical Remedy* well accommodated to the Kind of the Disease, and that destroys *Acids*, and repairs the Balsamick Nature of the *Nutricious Juice*, is sufficient to bring this sort of Distemper to a perfect Cure. I have often in this manner cured

cured, many poor afflicted Creatures, without the use of *General Remedies*. But not to make any change in the manner of Dressing, I say in the first Place, that *Ulcers* are but too common in the Hospitals of the Army: The ill Dyet of the Soldiers, their *Irregularities*, their *Fatigues*, and their unavoidable *Nastiness*, are more than enough to occasion such as are very obstinate, and difficult to be cur'd. Secondly, we have in *this Hospital* followed a *Method*, whereby in a little time, a great number of *Ulcers* were cur'd: For after *General Remedies*, and some slight *Diversions*, I us'd a Decoction of *Walnut Leaves* with a little *Sugar*; in this I dipt *Pledgets*, which I apply'd moderately hot, letting often three Days pass over without taking off that Dressing.

Many Persons in *France*, I know, have kept this *Composition* as a great Secret; but I thought it wou'd have been inconsistent with *Charity*, not to publish its Vertues, and the manner of making it.

I have experienc'd on a thousand Occasions, that it mightily *cleanses*, and *breeds Flesh*; mortifies and devours it *Acidities*, resists *Putrefaction*; removes plentiful *Suppurations*, and consumes the *Moisture* that hinders *Reunion*: In fine, it hath Vertues that surpass Belief, and its Effect is more quick than that of all the *Oyntments*, and *Cerats* with which Apothecaries Shops are stor'd, and which are commonly us'd
in

in curing of *Ulcers*, but often to no purpose. In the mean time I dare affirm, and that truly, that in the Places where I have us'd it, all these *Ulcers*, that were formerly thought *Incurable*, were thereby ended in a very short time.

Tho' I do but very seldom make any use of *Injections*, nevertheless, I have been sometimes oblig'd, to have recourse to this Remedy; from which I have reap'd more advantage, than from all those us'd in Practice; and especially in *hollow* and *deep Ulcers*: As also in *large Abscesses* of fleshy Parts, where there is great Putrefaction, and sometimes a considerable Cavity.

The *Scriptural Balsam*, spoken of before, which is only an equal Quantity of *Oyl* and *Wine*, boil'd to the consumption of the latter, is also an excellent Medicine for *Ulcers*: With this Remedy only, I have cur'd great numbers.

Many *Authors* there are, who have left us an Account of a vast number of *Remedies*, which are us'd in *Hospitals*; for which Reason, I will say nothing of them here, where my Design is only to make known those I use in my own Practice.

By what I have said of the seldom dressing of *Wounds*, it may be easily guess'd, that I am not for frequent Dressing of *Ulcers*: For if they proceed from an *Acid*, as *Etmullerus* thinks

we ought to endeavour not to promote the Coagulation, by admitting the *Acid* of the *Air*, which by insinuating its pointed Articles into *Ulcers*, corroborates the Cause, renders them putrid, sanious, and sometimes incurable.

'Tis not without ground, that *Galen*, as hath been declar'd already in the first Part, in his *Fourth Book, of the Composition of Medicines, Chap. 4.* hath ordered, to dress *Ulcers*, but once in three Days: And I believe that it wou'd yet be better, to do it more seldom; unless some urgent Cause require it; such as the Season of the Year, the badness of the Humors, or some other evil Disposition of Body.

We may observe, that Suppurative Medicines, us'd in dressing *Ulcers*, are extremely pernicious: For the *Matter* is but too plentiful; and requires to be lessened, and dry'd up, if we desire a perfect Cure. The Application of *Topical Remedies*, when well chosen, oftentimes performs in this Case, what neither *Diversions*, nor *Internal Medicines* cou'd do; and of such there are good store: But it depends only on the *Prudence*, and *Skill* of him that prescribes 'em, to use them seasonably; for we can expect no *desireable Effects*, either from one kind or another, but according as they are properly apply'd.

Unguentum Apostolorum, mix'd with *Unguentum Egyptiacum*, is not to be despis'd: It consumes

fumes all the corrupted, and the Superfluous Flesh. I have often apply'd this, before I made use of our *Lotion*.

The *Aqua Phagædenica*, or *Lime-water* mixt with *Salt of Lead*, or *Sal Armoniac* and *Aqua Cælestis*, have also serv'd us on such Occasions; for if one Remedy fails, as often falls out, we must have Recourse to another.

C H A P. XI.

Of Simple Fractures.

IN the Cure of *Simple Fractures*, commonly four things are propos'd to be done. First, to set the Bone, or bring it to its natural Figure. Secondly, to keep it so, with fit Dressings. Thirdly, to take care of the neighbouring Parts. And fourthly, to give the afflicted Member a convenient Posture.

First then, *Extension* is almost ever necessary, to reduce the Bone to its natural State, which is to be more or less vigorous, according to the *Quality* of the *Fracture*, the *Nature* of the *Broken Part*, or the *Age* and *Sex* of the Patient: but we must observe not to make *Extension*, when *Inflammation*, or other *Accidents* appear, till they are either remov'd, or considerably abated.

As

As to the second thing, which is the *necessary Dressings*, I have always observ'd the Direction of *Hippocrates*, in using *three Bands* as he did, in *simple Fractures*: *Celsus* employed six, but these, in my Opinion, were too many for the Part: wherefore, I chus'd rather to follow the Practice of *Hippocrates*, approv'd of by *Galen*, in the *Fifth Chapter* of his *Book of Method*.

The most Part of those who practise *Surgery*, differ in the Use of Topical Remedies. Some apply all *Dry*: As for my self, who am not confin'd, to the *Way* of the *Ancients*, in this Matter, I have found that the *Glair* and *Yolk* of an *Egg*, beat up together with a little *Oyl* of *Roses*, will answer all Expectations: It is *Astringent*, *Anodine*, and *Dissolving*: The rest of the *Dressings*, I use dry, unless an *Inflammation*, or some such thing, oblige me to the contrary: For as it is my Way to dress my Patient as seldom as possible, I apply the Bandage dry, that it may be the faster, and less apt to slacken.

Plaisters, and *Emplastick Medicines* employ'd in *Fractures*, stop up the *Pores* of the *Skin*, keep in the *Vapours*, that occasion *Itching*, and so oblige to take off the *Dressings*, oftner than is expedient; wherefore I endeavour, to avoid whatever may cause that Accident.

Hippocrates, used to take off the *Dressings*, three Days after Application. Many stay till the

the seventh; and for my self I delay it as long as ever I can. Experience has taught me, that it is most advantageous for the Patient not to be dress'd, till the *Callus* is intirely form'd; unless the Bands are loosen'd, or some unexpected Accident hath fallen out, such as *Itching*, and Disordersing of the reduced Bones. I could recount a great number of Soldiers, that have departed from this *Hospital*, cur'd of *Simple Fractures* of all sorts, according to my *Method*; but I shall content my self with the Relation of the following *Cure*.

A Soldier call'd *La Tulippe*, of the Regiment of *Conde*, was brought to this Place, having his right *Thigh-bone* broken about the middle, and shattered: This unlucky Accident befell him, as he was sleeping upon *Mount Genevre*, under a Tree, which at the same time was cut down, and fell upon his *Thigh*. So soon as he was committed to my Care, I reduc'd the Bone by a vigorous Extension, and apply'd a linnen Cloth, dipt in an entire Egg, beat up with a little *Oyl of Roses*, and a small quantity of good *Vinegar*, upon which I put some *Compresses*, then three or four pretty long *Rollers*, with some *Splints* of Past-board, encompassing all with a Piece of the same; and last of all the *Juncks*, with what belongs to 'em. *Diversions* were perform'd, and a moderat *Diet* ordered. I let the *Dressings* stay on for twenty

ty Days; at the end of which time, I found the Part in its right and natural Disposition: At this Dressing, I us'd *Emplastrum pro fracturis*, and apply'd the *Bandage* as before, with *Splints* of Wood, and the other things necessary. In twenty Days after, I took off the Dressings a second time, and found all things to my Satisfaction: and Twenty Days more pass'd before I look'd to it again; so that in sixty Days, I dress'd him only three times, not reckoning the first: He began now to rise and to walk on Crutches; and we continu'd still the Dressings upon his *Thigh*, omitting the *Junks*. In fine, after he had remain'd sometime in the Hospital, to recover his Strength, he return'd to his Regiment.

'Tis convenient to observe, that in *Simple Fractures* of the *Thigh*, we ought always to use on the hinder part, a *Splint* of the breadth of two or three Fingers, to sustain the Bone, which without this Precaution would be in Danger to bend, in Hospitals of the Army where the loose Straw on which the Soldiers lie, is apt to slip from under them, and so to make Holes or Furrows, capable to disorder the joyning of the broken Parts, unless they be supported by some thing, that is sufficiently stiff.

I have no Credit to give, to the inward Remedies, which some use for breeding

Callus

Callus : such as the Juice of Cowslip, of Agri-
mony, or its Root, taken in Drink ; and many
others to be seen in ancient Authors. *Nature*
is the Architect, and principal Framer of the
Callus, when she is allow'd that *Repose*, which
is necessary to her Acting : however I don't
disapprove, the use of incrassating Nourish-
ment, on such Occasions.

In the third Place, as to the Care of the
neighbouring Parts, when the Fracture is much
shatter'd and very painful, it is exceeding ad-
vantagious to apply *Defensives* to the Superior
Parts, and the *Emunctories* : the Liniment made
of an Egg beat up with Oyl of *Roses*, and some-
times with a little of that of *Turpentine*, and
some *Vinegar* ; when the *Contusion* is great,
answers also to this Intention ; together with
Embrocations with dissolving Oyls. Above
all, *Diversions* are of great Efficacy, to pre-
vent and remove *Accidents*.

As for the fourth Thing ; it is of great Im-
portance to the fractur'd Member, to be
plac'd in a convenient Situation, upon which
very often depends the good or ill Success of
the Cure. In Hospitals of the Army, all the
necessary Conveniences are not to be found ;
but the Ingenuity of the Surgeon, ought to make
up that Defect. The greatest Part of the
Wounded, are only laid upon Straw, which
has not Stability enough, to keep a Member
N 2 long

long in the same Situation : 'tis this Consideration that obliges me, after applying the three Bands, spoken of above, to use Splints in the first Dressing, unless the Pain engage me to defer 'em ; and afterward, I make all sure with a fourth Band : I add also the *Junks* ; and the *Sole* with what belongs to 'em ; if the *Fracture* is in the *Thighs* or *Legs*, if in the *Arm*, I use the *Sling* ; as also, if in the *Fore-Arm*, the *Case of Past-board* : all being well ty'd on, secures the Part in such sort, that there is no hazard of its being disorder'd. This is the Method I use in *Simple Fractures*.

C H A P. XII.
Of Compound Fractures.

Complexed Fractures are very hard to be cur'd. In the second Part of this Treatise may be seen, the manner how a good number of such, were brought to a perfect Cure: But we must not always flatter our selves, with Expectations of the like good Success; chiefly when part of the Substance of the Bone is lost. The Youth, and good Constitution of the Patient, are great Helps in such Occasions. The Method of Dressing Gently, Speedily and Seldom, saves a great deal of Time, and prevents very many Accidents. Nature, when at Liberty, and acting without Restraint, does things very surprising, and such as we wou'd have judg'd to be impossible.

The Generation of a Callus in a Simple Fracture, is undoubtedly more speedy, than in a complicated one: In the first the Heat is kept in, and united, and acts with more Strength and Quickness. The Bone being covered by the Teguments, is shelter'd from the injuries of the Air: For according to *Fabricius ab Aquapendente*, Part. 1. Bo. 4. Chap. 9. the external Air alters the Bones, and destroys their

Natural Temperament : More over *Nature* is not diverted, nor disturb'd in her Action by *Disruptions* or *Suppurations*. All consists in the Reducing of the *Fracture*, or rightly *Setting* the *Bone* ; as we have taught in the former Chapter.

From these Reasons a Consequence may be drawn, to justify my *Method* in respect of *Complicated Fractures* : For by Suppressing frequent *Dressing*, and giving all Diligence, to hinder the *Access* of the *Air* to such Wounds, I prevent all the *Accidents* it might occasion ; as great *Suppurations*, *Alterations*, *Rottenness*, *Fluxions*, *Pains*, and generally whatever prolongs the *Cure*, and often makes the Wounds incurable.

In *Complicated Fractures*, when there is great *Suppuration*, the *Matter* must undoubtedly be mixt, with the *Nutricious Juice* of the Bones, which from the first Moment of the *Fracture* begins to cover the Ends of the Bone, and form a *Callus*. *Tents* and *Dilaters*, with which commonly these sorts of Wounds are fill'd, by their Touch, hinder this Work, which ought not to be interrupted. Long and frequent *Dressings*, give time for the *Air* to penetrate into the Wounds, whereby the *Nourishment* of the Bone, loses what was spirituous in it, coagulates, breeds obstructions, or is turn'd into *Matter*. Moreover this *Method*, not only occasions always

Irritations

Irritations and Pains, but also deprives the Sick of that Rest, which is absolutely necessary to 'em.

Fabricius ab Aquapendente, in the eighth Chapter of the same Book, treating of *Complicated Fractures*, where the Bone is *not uncovered*, Orders the Lips of the Wound to be joyn'd together, and that it be dress'd but once in three Days. And in the tenth Chapter of the same Book, speaking of *Complicated Fractures* where the Bone is *laid bare*, directs to Joyn the Lips of the Wound by *Stitching* or otherwise; and afterwards to go on with the Cure, as in a *Simple Wound*.

I am not therefore the only Person, that has dress'd *complicated Fractures* after this Manner. It may be observ'd also, that *Rhasis*, and *Serapion* us'd this Method, in the Cure of Wounds of the Head with a Fracture of the Scull; for they say, that Wounds of the Head must be stitch'd up, even where the Scull is broken quite thorow.

If this may be done on such Occasions, much more in complicated Fractures of other parts of the Body: now the Stitching us'd by these Authors in Fractures of the Scull, was for no other End, but to exclude the Air, which might have prov'd hurtful to the Brain, the Membranes, and the Scull.

Galen, and *Avicen* advise Stitching in such a Case; but *Hippocrates* forbids it, in his Book

of *Wounds* of the *Head*. For my self I very rarely use it, in any part of the *Body*, tho' I don't disapprove it: But in *Gunshot Wounds*, it can't be practis'd, for many Reasons known to every *Body*.

Fractures with a *Wound*, are in general very troublesom: But these caus'd by *Fire-Arms* more than others; and they are also more or less hard to cure, according to the *Part* wherein they are: For the *Complicated Fractures* of the *Thigh*, which we have had under our Care in this *Hospital*, were not so soon cur'd as those of the *Leg*; nor these, as the *Fractures* of the *Arm*, and so of others; tho' in all, the same *Method* was always follow'd.

As to the difficulty of curing those of the *Thighs*, it is often occasion'd, by the Inconveniences to be met with, in the *Hospitals* of the *Army*: For there is difficulty in giving *Clysters* there, where we cannot afford the Accommodations necessary for voiding the Excrements: because wanting, ordinarily, Servants, handy and charitable enough to assist the Patients in such Occasions, they ly in their Nattiness, and are indiscreetly and violently mov'd; by which means the Cures become tedious and difficult. For we may be sure, that *Nature* acts with no less Diligence and Wisdom upon these, than upon other *Parts*.

I make no question, but many Persons will condemn this Way of dressing complicated
Fractures,

Fractures, which possibly will appear to be very new; For I own I never hitherto saw it us'd by any. But we ought not to be too forward to affirm, that what we have not seen, is not. There are, without doubt, many Secrets, both in *Nature* and in *Arts*, which wou'd be of notable advantage, were they known to us.

Those, who will give themselves the Trouble, exactly to follow this *Method*, may extricate themselves from the Errors, with which their Minds were prepossess'd against it.

C H A P. XIII.

Of Dislocations.

TIS in the Cure of *Dislocations*, that *Art* has the Advantage over *Nature*; because *that* alone accomplishes the Cure, without the Assistance of *this*: the *Operation* of the *Hand*, *Machines* and *Bands*, are the Means, that *Surgery* employs to reduce them.

Tho' this Subject, would afford an ample Field to Theory; yet I shall remit the young Surgeons to such *Authors*, as have designedly treated thereon. I will only say, that it is necessary to be thoroughly instructed, in the Knowledge of the *Bones*, and *Bandages*; and that, if possible, we must not lose one Minute of time, to restore the Parts that are dislocated, before the *Accidents* supervene, that oftentimes hinders the *Operation*. For the *Head* of the *Bone*, that is out of its Place, commonly presses on nervous and sensible Parts, and sometimes squeezes together the Vessels, that carry the Blood for the Nourishment of the Parts, which occasions a kind of *Palsy* and *Atrophy*, and sometimes a *Fluxion*: Moreover the Cavity of the receiving Bone, may be fill'd with

with the *Synovia*, or Humor that moistens the Joynts; which, if it be coagulated there by some Acid, will hinder the Head of the Bone to go into that Place, from whence it came out; in which case we may reckon the Restoring of the Bone to be impossible. Wherefore, we ought at first to employ all our Care, to procure its Reduction.

The Instruments necessary to reduce *Old Luxations*, or such *new* ones as require great Force, are not all to be found always in Hospitals of the Army; but the Hand of Servants, and the Ingenuity of the Operator, ought to make up that want as much as possible.

Guy de Chauliac, *Fabricius ab Aquapendente*, *Pareus*, and many others, have sufficiently explained the manner of *Reducing Dislocations*. A young Surgeon ought to omit nothing, that may conduce to his Accomplishment herein: For it is by these simple *Operations*, that the Vulgar knows to discern the Skilful from the Ignorant; because these sorts of Performances are altogether Chirurgical, and require only the Dexterity of the Artist to accomplish 'em.

I have found by Experience, that an Egg, beaten up with Oyl of *Turpentine* and a little *Vinegar*, is very profitable to the luxated Parts, to which it is apply'd; yea that it is a Remedy sufficient to answer all Intentions: *Aromatick*

tick Wine may be us'd, when this can't be had. If your design is only to strengthen, the Plaster *Pro Fracturis* will do the Business.

Bleeding, *Clysters*, and a convenient Course of Diet, ought not to be neglected, in great *Luxations* attended with *Contusion*: These sorts of Remedies oftentimes prevent being surpriz'd with Accidents, and remove them when present.

CHAP. XIV.

Of the Relaxation of the Joints.

Soldiers, who commonly ly on the Ground during the *Campaign*, in very severe Seasons, are lyable to have their Bodies stuff'd with superfluous Humors, wherewith all the Parts in general are soak'd: but in a special manner they very often fall upon the *Joints*, where softning, and relaxing the Ligaments that kept them fast, they do thereby occasion *Luxations* of the Parts.

This kind of *Distemper*, is very hard to be cur'd, and will scarcely yield to Remedies: we have had of them under our Hands in this Hospital, which have occasion'd us a great deal of Trouble, and but little Credit. *Hippocrates* in such Cases advises the use of the actual
Cautery,

Cautery, and *Galen* after him is also for the same Operation, in order to drain and consume the slimy and watery *Humours*, to strengthen the *Skin*, and to fasten and fortifie the *Joint*.

Hippocrates, for this purpose uses a Rope of raw *Flax*, which being set on fire, yields a Coal, like that of the Match us'd in Armies; and *Aetius*, according to *Archigens*, did it with the Root of *Fullers-Weed* and of *Birthwort*, probably to render the Operation more gentle: it is perform'd upon the Place, where the Head of the Bone bunches out.

This *Remedy* is rude; and we have never us'd it in this Hospital, because it frightens the Patient. Nevertheless these Distempers, are sometimes so painful, and withal so obstinate, that those who are under 'em, willingly submit to the most cruel *Operations*, that they may be released therefrom.

Fabricius ab Aquapendente relates, that after he had in such a Case, to no purpose, us'd very many things; the Patient was cur'd with a Plaister of a certain Herb, which he believ'd was *Hearts-Ease*, that was apply'd to him by a Quack.

As for my self, tho' I don't disapprove the Way us'd by the Ancients in this Case, yet I am of Opinion that it ought not to take Place, till more gentle Methods are first try'd: And this is the course we use to take, at first trying
what-

whatevet may heat, cut, dry, and strengthen : The *Oyl of Lavender*, the *Fat of the Mountain-Rat*, and *Spirit of Wine*, or the *Queen of Hungaries Water*, made up in form of a *Liniment*, and apply'd very warm, give great *Assistance* in such Cases ; to which may be added a little of the *Oyl of Turpentine*, which cuts, and opens the *Passages*, so making way for *Dissolving* and *Drying Medicines*.

But when I find these Remedies ineffectual ; I use such things as irritate, *Vesicatories*, and caustick Herbs, such as *Spurge*, *Celandine*, and the like ; which by the exasperation of the Pain, may cause a *Fluxion* upon the Part affected, that so the matter being after digested and ripened by a *Fermentation* ; all may be happily ended by an *Abscess*, as sometimes falls out.

When we have brought things to this Pass, we must not fail, without delay to restore the *Bones* into their *Cavity*, and to fortify the *Joynt*, with good *Aromatick Wines* quickened with *Spirit of Wine* ; or else with *Man's Grease*, and a little of the *Queen of Hungaries Water*, mixt and apply'd hot : and generally we may for this purpose use any thing, that may strengthen the *Member*, and wast the *Moisture*. In the mean time, the Part must always be supported with a good *Bandage*, and surrounded with *Compresses* and *Bolsters*, to command the Bone, and
keep

keep it fast in its Place : moreover the Patient must be very careful to keep himself quiet, and must observe a *Drying and Attenuating Course of Diet.*

C H A P. XV.

*The Conclusion of the Third Part ; with
some very useful Remarks.*

MY principal Design in this little Treatise, being to introduce for the Relief of *Wounded Persons*, a *Gentle, Speedy, and Easy Way* of curing their Distempers ; I have endeavoured to confirm the same, as much as lay in my Power, by *Reasons and Experiences*. I am not ignorant, that this *Part of Surgery* which concerns Wounds, does not exhaust its Bounds ; and that I have only slightly touch'd on other Things, that are of no less Importance.

My Intention, was not to transcribe from other *Authors* ; and therefore I thought it enough, superficially only to declare my Thoughts, of the other Parts of *Surgery* ; wherein also I have confin'd my self, to that which is most common, and most necessary, and was withall most particularly known to me ;
not

not being willing to speak of many Things, about which I had nothing new to advance. I think I have done what I design'd, and am ambitious of nothing else, but that my *Intention*, which I have sincerely declar'd, may have all the *Success* I cou'd wish it.

The Course I take to prevent the *Scaling* of *Bones*, explained in the first Part of this Book, I learnt from *Experience*; I hope also it will be found very useful and necessary, in dressing *Wounds* where the *Bone* is *uncovered*.

I drew also from the same Fountain, the manner of Dressing after the *Operation* of the *Trepan*; and yet I doubt not, but it will have the Fate to be condemn'd as new: However, I will not spend Time in anticipating the *Objections* of others, by answering them before hand: For whatever might be said in commendation of the *Plate*, which was never us'd by any before me, wou'd only prove an *Inducement* to excite the *Criticks* to decry it.

Experience, and *Reading* have inform'd me, that the *Air* is a mighty *Hinderance* to the *Cure* of *Wounds*: and I have endeavoured to find out an easy Way to hinder its *Access*, especially in *Wounds* where the *Scull* is cut: For 'tis evident, that the most part of the *Accidents* that attend such *Wounds*, are occasion'd only, through the little *Care* taken, to keep off the *Affaults* of the *Air*, which are promoted by
the

the Custom of long and frequent Dressings.

I have seen Surgeons spend whole Hours, in dressing Wounds of the Head, accompany'd with a Fracture of the Scull, to loosen, break, or cut off the Splinters, or some Piece of the Bone ; which ought never to be done, unless we are very well assur'd, that they prick the *Dura Mater*.

There are many, who think they have sped well, if at each Dressing, they can but extract some little Bit of broken Bone, which they carefully preserve, to shew to all that come, thinking thereby to gain Credit ; and to raise their *Reputaeiou*, by that which ought to be condemn'd, and often costs the Wounded Person his Life.

A very famous Officer, not long ago experienc'd, the fatal Effects of this cruel Method : for having had his Scull broken by a Bullet, whereby he was in a manner trepann'd, without hurting the Brain, or its Membraues ; or occasioning any dangerous Symptom : some Time was unadvisedly spent twice a Day, in loosening, and pulling away forcibly little Portions of the Bone, which Nature wou'd easily have separated, supposing that afterwards, which yet was impossible, they might chance to prick the *Dura Mater* : by this Method the *Dura Mater*, and the Brain were altered, and visibly mortify'd ; so that he dy'd on the Eleventh

venth Day of his Wound. I was indeed call'd to give my Advice, after his Condition was desperate ; but all I could do in this Case, was to give him notice of his approaching *Death*.

Many *Surgeons*, in a vain Ostentation, spend all their *Life*, and exhaust their *Diligence*, in unravelling all the Secrets of the new Discoveries in Physick, and in qualifying themselves to discourse accurately thereon ; contemning all the Opinions of the Ancients : while in the mean time, they remain in an intire Ignorance of the *Practice*, notwithstanding all their *Science*. If these *Men* were as desirous to be knowing, as ambitious to appear so, they would take another Course : And not confining themselves only to *Reasoning*, and to shew their *Wit* in *Consultations*, neglect to improve a good *Method*.

It is not enough to understand the *Nature*, and *Difference* of *Wounds*, and to know the cause of *Accidents* that befall them, nor yet quaintly to explain 'em, by *Reasons* purely *Speculative* and *Chymical* : We must joyn to the *Theory*, that is indeed very useful and necessary, a *Method* of *Curing* and *Rooting out* Distempers, which is to be look'd on as the most necessary Part of *Surgery* : But it is rare for those, who addict themselves wholly to *Reasoning*, to have such regard for *Practice*, as to acquire it to Perfection, and to abandon
their

their own Maxims, to follow others that are contrary to 'em. Wherefore, I have address'd this little Discourse to *young Surgeons*, who may possible reap some Advantage from it, not being incapable of the good Impressions, one desires to make upon 'em.

I am not desirous, that the *Newness* of this *Method*, should either engage them to follow it, or oblige 'em to reject it; but only wish that they may put it to a *Trial*, in order to make a true Judgement: For every reasonable Man, ought wisely to inform himself of the Truth of Things, and to examine their Consequences, before he positively give his Judgement. Nothing is more Easy for one, than to *Pass a Verdict*; and nothing more Difficult, than to *Judge aright*.

I am convinc'd by Experience, that it is dangerous to credit the Testimony of others. The wrong Judgment made on a *Wound*, that one of our most famous *Generals* receiv'd, *October 4. 1693.* being the Day of the *Fight of Marseils*, and my Easiness to rely on the Fidelity of another, and on the Report made to me, the Day after the first Dressing thereof, had almost cost him his *Life*. The *Wound* was deep, and made by a large *Bullet*, and was dress'd at first, as if it had been only a simple one, with a great quantity of Lint, whereof a Part was lost and fix'd in the Depth of the Wound:

Wound: However it happen'd very fortunately, that it was driven out by the *Matter*; but it left behind it, in the Place where it was hid, a considerable Mortification, which gave occasion to make great and deep *Incisions*, whereby a *Fracture* was discovered. Prudence hinders me to declare at more length, the Circumstances that accompany'd this Cure, to which *M. Dalibour*, Master-Surgeon sworn at *Paris*, and Surgeon Major of the *House of the Household*, an able and experienc'd Man, was called to give his Advice. In a Word, after many *Accidents*, all was brought to a happy Conclusion.

It is therefore absolutely necessary, for a Surgeon, who is careful of his Reputation, to search the Wounds himself, which were not dress'd by him at first, in order to discover their Nature, and know their Extent. This was not the only Person, who in the Day of that Fight, experienc'd the Inconveniency of being dress'd at first in a Hurry. I have for good Reasons, not mention'd several other Cases not much differing from the former, that occur'd in the same Occasion, wherein there were many dress'd in that Quarter, that was assign'd to the Body of Reserve, belonging to our Army.

In this Book, and particularly in the second Part thereof, may be seen, after what manner,

manner, I have brought to a perfect Cure, a great number of Wounds, of all Kinds and Qualities, with much Ease, small Charge, and with simple Remedies, which are no less useful to the Rich, than convenient for the Poor.

The great Charges ordinarily laid out upon the Cure of Wounds, sometimes involve the Patient, after that cure is perfected, in Evils no less troublesom than the former: The Wounds are fill'd, and clos'd up, but the Pockets are opened, and drain'd. That Person, of whom I spoke in the *twenty fifth Chapter* of the *Second Part*, before he came under my Care, had a Bill of *Three hundred and seventy six Livres*, brought him by the Apothecary, for Medicines furnish'd by him; when yet after all that Expence, there was no Appearance of a Cure.

The Credit of a Surgeon, does not consist in emptying the Shops, to cure his Patients: On the contrary, we ought rather Christian like to be saving of the Money of those, who put their very Person and Life in our Hands: And if they chance to prove so ungrateful, as to deny us what we have deserv'd; after such a good Deed, we may expect our Reward from Heaven. We ought not to be brib'd, by the consideration of a Mean Interest, to abandon the Fidelity, wherewith we ought to endeavour the Speedy Cure of our Patients.

IF

If a Patient is destroy'd by unexpected Accidents, when the Cure is delay'd on a mercenary Account ; the Surgeon, under whose Care he was, becomes guilty of his Death.

I have seen many Persons of Note, whom I won't name, who passing through *Briançon*, eight or nine Months after the Battel of *Marseils*, wherein they had been wounded, were either fistulous, or very far from being completely cur'd.

Nevertheless, that I may not rashly blame those, who had these Persons under their Care, I am willing to believe, that the *Tenderness* of their *Constitution*, their *ill Temperament*, or the *unwholsom Air*, which very much conduces to continue the Wounds, occasion'd that Tedioufness of these Cures ; which in other Persons and Circumstances, had been perfectly finish'd in two or three Months at most : but I can't restrain my self from saying, that the *Tents*, as well as the frequent, and painful Way of Dressing so much in Use, are sufficient to cause all these Accidents, and to hinder the Cure of Wounds : and this is what makes *Surgeons* hated, and *Surgery* chargeable.

In this little Work, I have done what I cou'd to shew, not so much by Reasoning, as *Examples* and *Authority*, that *Nature* has the greatest Hand in curing Wounds ; or to speak more

more truly, that she is the principal Worker therein : But I leave it to the performance of more delicate Pens, to celebrate her Praises, and publish her Excellencies; contenting myself to admire her Wonders, which are no less unaccountable than they are surprizing.

The Year 1686. afforded me an Occasion, wherein it appear'd, that *Nature* ever acts for the Preservation, of the most noble and the most perfect of her Works. A Soldier of the Fort of *Mirabout*, which parts the Valleys of *Luserne* from *Queras*, having rob'd his Captain, was pursu'd; and finding no other Way to escape, he threw himself down from the top of the Walls upon the Rocks, where falling on his Feet, they were not only put out of Joynt, but each of them were fractur'd with a Wound : He was taken, and brought to the Fort, where there was no Surgeon, by reason of the Smallness of the Garrison.

He lay four Months on Straw, without any Relief but Bread and Water; during which time his Feet were gangren'd, and soon afterward intirely mortified.

But, which is extremely surprizing, around the lower part of both the Legs, a little above the Ankle, *Nature* her self form'd a certain Wreath or Roll, which stopt the Progress of the Mortification, so that what was beyond this, was abandon'd to the Fury of the *Sphacelus*,
while

while whatever was above these *Rolls*, was free from Blemish.

He cut off the *Right Foot* himself by the *Joynt*, with a little *Pocket-knife*, without either *Pain* or *Bleeding*; and because the *Putrefaction*, occasion'd an *Intollerable Smell* over all the *Fort*, by Reason of the excessive Heat, he was sent to our Hospital at *Luferne*.

By the Way he lost a good part of the *Other Foot*, which came away of its own accord; and notwithstanding the *contagious Smell*, which as a *Carrion*, he dispers'd in all the Places where he pass'd, and also the extreame Heat of the Season, the *Mortification* did not pass over the Bounds that *Nature* had given it; only these *Wreaths* that we mention'd above, were considerably increas'd in Bulk by the Way.

After he had recovered his Strength, by the Assistance of good *Cordials*, some *Wine*, and *Viſtuals*, I cut off all that appear'd to be intirely mortify'd, not sparing the highest Places of the *Rolls*, which cast an insupportable Smell: I let him rest till to morrow, and then cut off one *Leg*, and the other the Day after: For the Ends of the *Tibia* and *Fibula* were altogether rotten and uncover'd. Finally, no other Accident happen'd during the rest of the Cure, which was compleated not long after.

This wonderful Example, is sufficient to evince, that the want of *Art*, is oftentimes sup-
ply'd

ply'd by *Nature*. This may further appear also by what follows, being a very strange thing that happen'd at *Pignerol*. *M. De la Place*, Captain in the Regiment of *Barrois*, was wounded with a *Bullet* at the Battel of *Marseils*, that entred at the middle and hinder Part of the *Fore-arm*, and came out at the lower and fore-part of the same, breaking the *Cubitus* in its passage. He was drest by *M. Malinas*, a Surgeon-Major belonging to the Army in *Italy*, and Master Surgeon of *Lyon*, very skilful in his *Impliment*.

This *Wound* was attended with some troublesome Accidents: For together with a *Continual Fever*, an *Abscess* was form'd by a Collection of Matter, which was extended over all the *Arm* and *Fore-Arm*: But as they were preparing to make an Opening, the wounded Person was seiz'd with a great *Loosness*, which all of a sudden put an *End* to that *Tumor*, and restor'd the *Arm* and *Fore-Arm* to their natural State. This unexpected *Accident*, being followed by so surprizing an Effect, oblig'd his Surgeon to cause take a view of that, which the *Patient* had voided, and it was found to be the very *Matter* of the *Abscess*, without any thing else, save some little Excrement, which remain'd altogethr unmix'd therewith: Moreover, according as new *Matter* was gathered in the same Places, it was still voided again by

O

Stool,

Stool, in a little time after. In fine, the *Wounds* being compleatly cur'd, the *Loosness* ceas'd, because that was remov'd which occasion'd it.

Perhaps the *Matter* was taken up by the *Veins*, and by means of the *Circulation* carried to the *Mesaraicks*, and thence emptied into the *Guts* : but this I only propose as an uncertain *Conjecture*, all other Ways being to me unknown : I willingly leave it to the *Learn'd*, to be explain'd according to their different *Apprehensions*. But that which inclines me to think, that this *Way* has some Appearance of Truth, is, that this same *Surgeon* solemnly protested to me, that at the beginning of the same Campaign, he had under his Care a *Captain* who had a Wound in the *Thorax*, that pierc'd into the Substance of the *Lungs*, and was accompany'd with all the *Accidents*, common to such kind of Wounds ; all which, nevertheless were remov'd by Opening a *Vein* in the *Arm*, which was done with an Intention to let *Blood*, instead of which nothing came out by the *Orifice* made in the *Vein*, but *real Matter*, that had been sent thither from the *Breast*. Many Persons worthy of Credit, who were Eye-Witnesses, assur'd me of the Truth of this *Prodigy*.

Fabricius Hildanus, Chapt. 3. *Observ.* 39. relates, that an *Inveterate Ulcer* in the *Leg* with a *Fistula*, having been rashly and unseasonably

cur'd

cur'd, was followed by a *Pleuresie*, in which the Patient voided at the Mouth a *Matter*, like to that which us'd to come from the *Ulcer* of the *Leg*.

It were an easie *Matter*, to adduce an infinite number of Examples almost alike, wherein *Nature* appears to have surpass'd even herself; either in Preserving Parts afflicted, or in easing such as are Overcharg'd with Humours, or finally, in Uniting such as are Divided.

In the Year 1686. one *Lansavecke*, Quarter-Master of the Dragoons of *Verue*, in the War against the *Vaudois*, was wounded by a large *Bullet*, in the upper and side-part of the *Hypogastrium*, and by all the *Accidents* it appear'd, that the *Colon* was opened and torn by the *Bullet*: there came out at the *Wound*, for more than the space of two Months, an *excrementitious Matter*, during which time he suffer'd grievous Pains: At length *Nature*, without any Assistance, clos'd up the *Wound* of the *Gut*, tho' the *Bullet* was lost; and he left *Luferne* at the Breaking up of the Hospital, which was three Months after his Receiving the *Wound*.

Hildanus, has a like Observation, of a certain Man, who had one of the great Guts opened, in the Operation of the *Bulonocle*, which clos'd up of its own Accord. In fine, as we are oftentimes surprized by things, that

could not be hop'd, but from either the *Bounty*, or even the *Caprice* of *Nature*; so also very extraordinary things fall out in Wounds, by an Effect of Chance, as well by reason of the *Posture* Men are in when they receive their Wounds, as because of the *Figure* of these things with which they are wounded.

In the same Year 1686. One wounded with a Shot, was brought to the Hospital at *Luferne*: the *Bullet* entered, on the lower and middle part of the *Os Occipitis*, and grazing upon the *Temple-Bone*, came out under the *Right Ear*, carrying away a Part therof. Tho' it plainly enough appear'd, that the *Bullet* had touch'd the *Skull*, yet the Wound was dress'd as a simple one, because no Accident appear'd; and it was left to the Care of the Servants: thus three Days past; during which the Patient was troubled with a Restlessness, complaining only that he could not put himself in an easie Posture, which was not much minded: Nevertheless, he dy'd on the fourth Day of his Wound, with all the Symptoms that usually attend *sleepy Distempers*.

The unexpected Death of this Man, oblig'd me to open his *Skull*: I found he had been wounded with a little *Wedge* of *Lead*, which hitting against the middle Ridge, on the lower Part of the *Os Occipitis*, when at the same time his Head was bow'd down, was cut in
two

two by the sharp Edge of the Bone, and one part thereof had flipt upon the *Temple-Bone*, as was said, and the other had enter'd the Cavity of the *Scull* of that same Side, and remain'd fix'd between it and the *Membranes*, which were cut and press'd thereby. His Fellow-Soldier in the same Day and Action, had two Wounds by one Shot; the first a little below the *Yoke-Bone* of the left Side, and the other in the middle part of the *Right Hypochondre*: Yet he was compleatly cur'd in twelve Days, with a Moderate *Suppuration*, and no *Accidents*.

I have seen many *Wounds*, that were no less strange than these: But in order to make a right Judgment in such like Cases, the Nature and Figure of the *wounded Part*, the Posture of the Person when he received the Wound, together with the Figure of that which made it, must all be very carefully examin'd beforehand. Now the ready apprehending of all these Circumstances, with many others also, very necessary to be known, in order to successful Practice, can't be attain'd by Surgeons, without great *Study*, continual *Exercise*, and unwearied *Diligence*.

The Ascent, whereby we mount unto the *Temple of Esculapius*, is no less difficult and steep, than that by which we rise unto *Mount Parnassus*: 'Tis almost impossible to get up, without making some false Steps. However 'tis but

reasonable to think, that those who were employ'd in *Hospitals* and *Armies*, during the late *War*, by the innumerable different cases which it hath afforded, have discover'd things very surprizing, and no less useful in Practice; and have often seen the *Strange Ways* that *Nature* takes, to throw off what offends by healthful *Evacuations*, and to accomplish her Designs.

Such as impart to the Publick their *Observations* and *Experiences*, which are the Fruits of their *Diligence*, and of their *Care*, have deserved well of *Mankind*. Many *Surgeons* there are, who have not the Advantage of *Occasions*, to accomplish themselves in this sort; and of those that have, few are so charitable as to publish, what they have seen and remark'd that is Extraordinary.

When a Man, does not communicate his *Attainments*, by *Writing*, to the Publick, let his *Endowments*, and his *Knowledge* be never so great, they are for the most part, if not altogether, buried with himself in the Ground. The *Good* that a Man can do, lasts but for a time; but the *Excellent Advices*, that he leaves in writing to Posterity, are useful for ever: We had been still in *Ignorance*, had not the *Writings of the Ancients*, come down to our Hands.

Wherefore, I thought my self bound in *Conscience*, (tho' at the Hazard of being condemn'd

demn'd by the *Envious*) to impart to the *World* my *Experiences*, That, if possible, I might procure, to poor wounded Persons, a more speedy Assistance, than can possibly be afforded, by the Common Method. If I shall have the *Happiness*, to succeed in my *Design*, I shall think my self sufficiently recompens'd for all my *Toyl*, and will praise the *Almighty Father of Lights*, who, by *small Means*, oftentimes brings *Mighty Things* to pass.

F I N I S.

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